LOCKWOOD LABORATORIES

A Springfield Environmental Company

Committed To Providing Quality Analytical Services

ATTN WILLIAM T MILLER
HOHMAN PLATING & MFG INC
814 HILLROSE AVENUE
DAYTON OH 45404

May 20, 1997

Dear Mr. Miller,

I wish to thank you for sending the Belmonte Lab's results to me regarding the recent split sampling event. There was no question, in my analyst's mind, that Methylene Chloride and Toluene were present in your samples. The analyst ran the samples over and over, ran QC and blanks, and furthermore, the other samples on the instrument runs did not show the compounds, however, your split and my split did not confirm the presence of the compounds. With this information, I concluded that the compounds were not present at sampling, yet were present at analysis (i.e. we put them there somewhere between sampling and analysis).

The analysts turned the laboratory "upside down and inside out" to find the problem. The problem was found to be a leaking sample container in one of the storage refrigerators. I find it inconceivable that a sealed sample container could absorb as much contamination as yours did in a refrigerator, yet it happened. My analyst conducted an experiment over the weekend where sealed sample containers containing deionized water were placed in the refrigerator. The lab analysis of the containers showed results in the same range as the results provided to you for your samples.

In summary, outside laboratory analysis has shown that your samples do not contain Methylene Chloride and Toluene, even though my laboratory's analysis had shown the compounds. Quality control confirmed the presence of the compounds in the samples my lab analyzed. An investigation was conducted and it was found that a leaking sample container in one of the storage refrigerators contaminated your samples. An

1001 East Street • PO Box 2728 • Springfield, Ohio 45501-2728
Tel: (513) 324-8001 Fax: (513) 324-5185

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Certificate of Analysis

WILLIAM T MILLER
HOLMAN PLATING

SAMPLE ID:	Barrel Number
SAMPLE LOG #:	39107-213

* Laboratory Comment: It is felt that the Methylene Chloride and Toluene found in this sample are from laboratory contamination. A leaking sample was discovered in the sample storage refrigerator and it was found that blank samples stored next to the leaking sample also contained the same compounds.

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Lockwood Laboratories — A Springfield Environmental Inc. Company

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CHAIN OF CUSTODY

CLIENT	Hahman Plating	PROJECT NAME	Soil
ADDRESS	814 Hulbert Ave Dayton Ohio 45404	SAMPLE LOCATION	Middle of Building Front Side CO: Montgomery
CONTACT	Bill Millard	COLLECTED BY	FMI, F. / SBT
TELEPHONE		PO NUMBER	

SDWA ____ NPDES ____ RCRA ____ PWS ID ____ OTHER ✓ QUOTE ____

ANALYSIS REQUESTED: VOC

SAMPLE ID #	METHOD GR	METHOD COMP	SAMPLE TYPE	DATE	TIME	# OF BOTTLES	VOC	LAB USE ONLY LOG #
Hahman S.D.F. Back Door	✓		Soil	4-29-97		3	✓	31157-213

COMMENTS: Bill Will Pickup

SAMPLE RELINQUISHED BY: William T. Miller — DATE/TIME 4/29/97 9:25AM

SAMPLE RELINQUISHED BY: [signature] — DATE/TIME 4-29-97 11:35

SAMPLES RECEIVED BY: [signature] of SEL — DATE/TIME 4-29-97 9:25

SAMPLES RECEIVED BY: ____ — DATE/TIME ____

REQUESTED DUE DATE ____

RUSH YES ____ NO ____

SAMPLES RECEIVED IN LAB BY: Inga Damman — TIME 11:35 — DATE 4/29/97

TERMS & CONDITIONS

1. Minimum invoice amount is $25.00
2. Payment terms are NET 30 Days with approved credit A 2% discount is available for payments within 10 Days Past due invoices are subject to a finance charge
3. Submission of Chain of Custody and samples constitutes an agreement to perform the analysis and the client agrees to pay for any analyses completed prior to a notification "not to proceed"
4. Samples found to be "hazardous" will be returned to the client for disposal Radioactive samples will not be accepted
5. Complex samples may incur an additional prep charge Client will be notified before lab proceeds
6. The fee structure reflects our normal QC/QA protocol Additional QC/QA will require a surcharge
7. TURNAROUND TIME (TAT) is usually one week or less. Every effort will be made to accommodate RUSH samples Additional charges, up to 100%, may be added depending on the time requirements ADVANCE NOTIFICATION OF RUSH SAMPLES IS APPRECIATED!
8. Confidentiality of all data and customer information is strictly adhered to by Lockwood Laboratories and Springfield Environmental
9. Samples will be analyzed in accordance with approved & standard test procedures to the best of our ability. Lockwood Laboratories, however, cannot be held responsible for the representativeness of the sample In no event shall Lockwood Laboratories be held liable for the consequences of the data reported and its use, and shall be liable only for the monetary value of the tests

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Certificate of Analysis

ATTN WILLIAM T MILLER
HOLMAN PLATING
814 HILLROSE AVE
DAYTON OH 45404

Report Date: 05/20/97 *
Report Released By:

Ed Lockwood Jr., Pres.

PROJECT: EPA Split Project
SAMPLE ID: Rolloff Box
COUNTY TAKEN: Montgomery
SAMPLE TYPE: Soil/Composite
DATE TAKEN: 03/24/97 03:45 p.m.
DATE RECEIVED: 03/25/97

LABORATORY ID: 38632-213

ANALYSIS

COMPONENT	CONCENTRATION (ug/kg)	DETECTION LIMIT
Acetone	<100	100
Acetonitrile	< 50	50
Acrolein	<100	100
Acrylonitrile	<100	100
Allyl Chloride	< 50	50
Benzene	< 5	5
Bromodichloromethane	< 5	5
Bromoform	< 5	5
Bromomethane	< 10	10
2-Butanone	< 50	50
Carbon Disulfide	< 10	10
Carbon Tetrachloride	< 5	5
Chlorobenzene	< 5	5
Chloroethane	< 10	10
2-Chloroethyl Vinyl Ether	< 10	10
Chloroform	< 5	5
Chloromethane	< 10	10
Dibromochloromethane	< 5	5
1,2-Dibromo-3-chloropropane	< 50	50
1,2-Dibromoethane	< 5	5
1,2-Dichlorobenzene	< 5	5
1,3-Dichlorobenzene	< 5	5
1,4-Dichlorobenzene	< 5	5
trans-1,4-Dichloro-2-butene	< 5	5
Dichlorodifluoromethane	< 10	10

LOCKWOOD LABORATORIES

Certificate of Analysis

WILLIAM T MILLER
HOLMAN PLATING

SAMPLE ID: Rolloff Box
SAMPLE LOG #: 38632-213

COMPONENT	CONCENTRATION (ug/kg)	DETECTION LIMIT
1,1-Dichloroethane	< 5	5
1,2-Dichloroethane	< 5	5
1,1-Dichloroethene	< 5	5
trans-1,2-Dichloroethene	< 5	5
1,2-Dichloropropane	< 5	5
cis-1,3-Dichloropropene	< 5	5
trans-1,3-Dichloropropene	< 5	5
Diethyl Ether	< 5	5
Ethyl Methacrylate	<50	50
Ethylbenzene	< 5	5
2-Hexanone	<50	50
Methacrylonitrile	<50	50
Methyl Iodide	<10	10
Methyl Methacrylate	<50	50
Methylene Chloride	120	10
4-Methyl-2-Pentanone	<50	50
Styrene	< 5	5
1,1,1,2-Tetrachloroethane	< 5	5
1,1,2,2-Tetrachloroethane	< 5	5
Tetrachloroethene	< 5	5
Toluene	9.9	5
1,1,1-Trichloroethane	< 5	5
1,1,2-Trichloroethane	< 5	5
Trichloroethene	< 5	5
Trichlorofluoromethane	<10	10
1,2,3-Trichloropropane	< 5	5
Vinyl Acetate	<50	50
Vinyl Chloride	<10	10
m-and p- Xylene	6.1	5
o-Xylene	< 5	5

METHODOLOGY: Volatiles by Method SW846 8260, analyzed by TLL on 04/02/97.

SURROGATE RECOVERIES:		
	Dibromofluorobenzene	86 %
	Toluene d8	87 %
	4-Bromofluorobenzene	79 %

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Certificate of Analysis

WILLIAM T MILLER
HOHMAN PLATING

under Old.

SAMPLE ID: Rolloff Box
SAMPLE LOG #: 38632-213

TEST	RESULTS	UNITS	ANALYST	DATE	METHOD
Arsenic	1.204	mg/kg	EL	03/31/97	7060
Barium	54.83	mg/kg	EL	03/31/97	7080
Cadmium	30.16	mg/kg	EL	03/31/97	7130
Chromium	65.58	mg/kg	EL	03/31/97	7190
Lead	28.42	mg/kg	EL	03/27/97	7420
Mercury	1.4	mg/kg	EL	03/30/97	7421
Selenium	< 0.43	mg/kg	EL	03/31/97	7740
Silver	1.78	mg/kg	EL	03/31/97	7770

* Laboratory Comment: This report was originally issued 04/04/97. It is found that the Methylene Chloride and Toluene found in this sample are from laboratory contamination. A leaking sample was discovered in the sample storage refrigerator and it was found that blank samples stored next to the leaking sample also contained the same compounds.

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LOCKWOOD LABORATORIES

Certificate of Analysis

ATTN WILLIAM T MILLER
HOLMAN PLATING
814 HILLROSE AVE
DAYTON OH 45404

Report Date: 05/20/97*
Report Released By:

Ed Lockwood Jr., Pres.

PROJECT:	EPA Split Project
SAMPLE ID:	Barrel Area
COUNTY TAKEN:	Montgomery
SAMPLE TYPE:	Soil/Composite
DATE TAKEN:	03/24/97 02:16 p.m.
DATE RECEIVED:	03/25/97
LABORATORY ID:	38629-213

ANALYSIS

COMPONENT	CONCENTRATION (ug/kg)	DETECTION LIMIT
Acetone	<100	100
Acetonitrile	< 50	50
Acrolein	<100	100
Acrylonitrile	<100	100
Allyl Chloride	< 50	50
Benzene	< 5	5
Bromodichloromethane	< 5	5
Bromoform	< 5	5
Bromomethane	< 10	10
2-Butanone	< 50	50
Carbon Disulfide	< 10	10
Carbon Tetrachloride	< 5	5
Chlorobenzene	< 5	5
Chloroethane	< 10	10
2-Chloroethyl Vinyl Ether	< 10	10
Chloroform	< 5	5
Chloromethane	< 10	10
Dibromochloromethane	< 5	5
1,2-Dibromo-3-chloropropane	< 50	50
1,2-Dibromoethane	< 5	5
1,2-Dichlorobenzene	< 5	5
1,3-Dichlorobenzene	< 5	5
1,4-Dichlorobenzene	< 5	5
trans-1,4-Dichloro-2-butene	< 5	5
Dichlorodifluoromethane	< 10	10

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Certificate of Analysis

WILLIAM T MILLER
HOLMAN PLATING

SAMPLE ID: Barrel Area
SAMPLE LOG #: 38629-213

COMPONENT	CONCENTRATION	DETECTION (ug/kg) LIMIT
1,1-Dichloroethane	< 5	5
1,2-Dichloroethane	< 5	5
1,1-Dichloroethene	< 5	5
trans-1,2-Dichloroethene	< 5	5
1,2-Dichloropropane	< 5	5
cis-1,3-Dichloropropene	< 5	5
trans-1,3-Dichloropropene	< 5	5
Diethyl Ether	< 5	5
Ethyl Methacrylate	<50	50
Ethylbenzene	< 5	5
2-Hexanone	<50	50
Methacrylonitrile	<50	50
Methyl Iodide	<10	10
Methyl Methacrylate	<50	50
Methylene Chloride	250	10
4-Methyl-2-Pentanone	<50	50
Styrene	< 5	5
1,1,1,2-Tetrachloroethane	< 5	5
1,1,2,2-Tetrachloroethane	< 5	5
Tetrachloroethene	8.3	5
Toluene	24	5
1,1,1-Trichloroethane	< 5	5
1,1,2-Trichloroethane	< 5	5
Trichloroethene	< 5	5
Trichlorofluoromethane	<10	10
1,2,3-Trichloropropane	< 5	5
Vinyl Acetate	<50	50
Vinyl Chloride	<10	10
m-and p- Xylene	< 5	5
o-Xylene	< 5	5

METHODOLOGY: Volatiles by Method SW846 8260, analyzed by TLL on 04/02/97.

SURROGATE RECOVERIES:		
	Dibromofluorobenzene	98 %
	Toluene d8	87 %
	4-Bromofluorobenzene	75 %

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LOCKWOOD LABORATORIES

Certificate of Analysis

WILLIAM T MILLER
HOHMAN PLATING

SAMPLE ID: Barrel Area
SAMPLE LOG #: 38629-213

Hot Spot Lowest inorganic

TEST	RESULTS	UNITS	ANALYST	DATE	METHOD
Arsenic	1.047	mg/kg	EL	03/31/97	7060
Barium	47.69	mg/kg	EL	03/31/97	7080
Cadmium	4.47	mg/kg	EL	03/31/97	7130
Chromium	60.78	mg/kg	EL	03/31/97	7190
Lead	18.55	mg/kg	EL	03/27/97	7420
Mercury	1.5	mg/kg	EL	03/30/97	7421
Selenium	< 0.374	mg/kg	EL	03/31/97	7740
Silver	0.935	mg/kg	EL	03/31/97	7770

* Laboratory Comment: This report was originally issued 04/04/97. It is felt that the Methlylene Chloride and Toluene found in this sample are from laboratory contamination. A leaking sample was discovered in the sample storage refrigerator and it was found that blank samples stored next to the leaking sample also contained the same compounds.

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Certificate of Analysis

WILLIAM T MILLER
HOLMAN PLATING

SAMPLE ID: South Base
SAMPLE LOG #: 38630-213

COMPONENT	CONCENTRATION (ug/kg)	DETECTION LIMIT
1,1-Dichloroethane	< 5	5
1,2-Dichloroethane	< 5	5
1,1-Dichloroethene	< 5	5
trans-1,2-Dichloroethene	< 5	5
1,2-Dichloropropane	< 5	5
cis-1,3-Dichloropropene	< 5	5
trans-1,3-Dichloropropene	< 5	5
Diethyl Ether	< 5	5
Ethyl Methacrylate	<50	50
Ethylbenzene	< 5	5
2-Hexanone	<50	50
Methacrylonitrile	<50	50
Methyl Iodide	<10	10
Methyl Methacrylate	<50	50
Methylene Chloride	940	10
4-Methyl-2-Pentanone	<50	50
Styrene	< 5	5
1,1,1,2-Tetrachloroethane	< 5	5
1,1,2,2-Tetrachloroethane	< 5	5
Tetrachloroethene	< 5	5
Toluene	24	5
1,1,1-Trichloroethane	< 5	5
1,1,2-Trichloroethane	< 5	5
Trichloroethene	< 5	5
Trichlorofluoromethane	<10	10
1,2,3-Trichloropropane	< 5	5
Vinyl Acetate	<50	50
Vinyl Chloride	<10	10
m-and p- Xylene	< 5	5
o-Xylene	< 5	5

METHODOLOGY: Volatiles by Method SW846 8260, analyzed by TLL on 04/02/97.

SURROGATE RECOVERIES:		
	Dibromofluorobenzene	108 %
	Toluene d8	88 %
	4-Bromofluorobenzene	82 %

LOCKWOOD LABORATORIES

Certificate of Analysis

WILLIAM T MILLER
HOHMAN PLATING

SAMPLE ID: South Base
SAMPLE LOG #: 38630-213

TEST	RESULTS	UNITS	ANALYST	DATE	METHOD
Arsenic	0.806	mg/kg	EL	03/31/97	7060
Barium	102.31	mg/kg	EL	03/31/97	7080
Cadmium	2.47	mg/kg	EL	03/31/97	7130
Chromium	51.41	mg/kg	EL	03/31/97	7190
Lead	103.28	mg/kg	EL	03/27/97	7420
Mercury	1.7	mg/kg	EL	03/30/97	7421
Selenium	< 0.336	mg/kg	EL	03/31/97	7740
Silver	1.211	mg/kg	EL	03/31/97	7770

* Laboratory Comment: This report was originally issued 04/04/97. It is felt that the Methylene Chloride and Toluene found in this sample are from laboratory contamination. A leaking sample was discovered in the sample storage refrigerator and it was found that blank samples stored next to the leaking sample also contained the same compounds.

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LOCKWOOD LABORATORIES

Certificate of Analysis

ATTN WILLIAM T MILLER
HOLMAN PLATING
814 HILLROSE AVE
DAYTON OH 45404

Report Date: 05/20/97 *
Report Released By:

Ed Lockwood Jr., Pres.

PROJECT:	EPA Split Project
SAMPLE ID:	North Base
COUNTY TAKEN:	Montgomery
SAMPLE TYPE:	Soil/Composite
DATE TAKEN:	03/24/97 03:16 p.m.
DATE RECEIVED:	03/25/97
LABORATORY ID:	38631-213

ANALYSIS

COMPONENT	CONCENTRATION (ug/kg)	DETECTION LIMIT
Acetone	<100	100
Acetonitrile	< 50	50
Acrolein	<100	100
Acrylonitrile	<100	100
Allyl Chloride	< 50	50
Benzene	< 5	5
Bromodichloromethane	< 5	5
Bromoform	< 5	5
Bromomethane	< 10	10
2-Butanone	< 50	50
Carbon Disulfide	< 10	10
Carbon Tetrachloride	< 5	5
Chlorobenzene	< 5	5
Chloroethane	< 10	10
2-Chloroethyl Vinyl Ether	< 10	10
Chloroform	< 5	5
Chloromethane	< 10	10
Dibromochloromethane	< 5	5
1,2-Dibromo-3-chloropropane	< 50	50
1,2-Dibromoethane	< 5	5
1,2-Dichlorobenzene	< 5	5
1,3-Dichlorobenzene	< 5	5
1,4-Dichlorobenzene	< 5	5
trans-1,4-Dichloro-2-butene	< 5	5
Dichlorodifluoromethane	< 10	10

LOCKWOOD LABORATORIES

Certificate of Analysis

WILLIAM T MILLER
HOHMAN PLATING

SAMPLE ID: North Base
SAMPLE LOG #: 38631-213

TEST	RESULTS	UNITS	ANALYST	DATE	METHOD
Arsenic	0.644	mg/kg	EL	03/31/97	7060
Barium	46.29	mg/kg	EL	03/31/97	7080
Cadmium	1.99	mg/kg	EL	03/31/97	7130
Chromium	27.47	mg/kg	EL	03/31/97	7190
Lead	41.52	mg/kg	EL	03/27/97	7420
Mercury	1.2	mg/kg	EL	03/30/97	7421
Selenium	< 0.415	mg/kg	EL	03/31/97	7740
Silver	0.664	mg/kg	EL	03/31/97	7770

* Laboratory Comment: This report was originally issued 04/04/97. It is felt that the Methylene Chloride and Toluene found in this sample are from laboratory contamination. A leaking sample was discovered in the sample storage refrigerator and it was found that blank samples stored next to the leaking sample also contained the same compounds.

Local 775

JEY WELLS President ROBERT PRICE — Vice President JESSE CECIL — Financial Secretary Treasurer

News Release -- Immediate -- Tuesday, August 13, 1996

Statement of Wesley Wells, President, IUE Local 775

As we informed you on August 3, 1996, the Federal Mediator, Steve Anderson, invoked a 14-day 'Cooling Off' period beginning on August 3 and continuing through August 17, 1996. The Union still had the right to invoke strike intention notification within seven (7) days after August 3; and the unrestrained right of the Union to pursue Safety Violations with the Occupational Safety & Health Agency (OSHA) and the Ohio Environmental Protection Agency (EPA).

On Friday, August 2, 1996, we notified the Regional OSHA office (copy attached) and Regional Director William Murphy assigned two OSHA Compliance Officers to investigate the Union's safety issues at Hohman Plating & Mfg., 814 Hillrose Avenue in Dayton. The Compliance Officers arrived at Hohman on Wednesday, August 7, 1996.

Since their arrival, the numbers of violations being uncovered by the Compliance Officers and IUE Local 775 Safety Director are astonishing. Two (2) distinct Imminent Danger Violations were detected, and absolutely appalling numbers of safety hazards. Safety hazards that involve volatile chemicals used by the company in its plating processes and the employees exposure to them. The OSHA Compliance Officers stated to our IUE 775 Safety Representatives that they expect to be on site for at least two (2) weeks.

Our IUE 775 Safety Personnel uncovered a remarkable number of what they feel are EPA violations by Hohman to the environment and possibly Dayton's Well Field. On the afternoon of August 12, 1996, we notified the Ohio EPA by telephone and were advised that an Agent would be assigned. Prior to the news conference this morning we have not heard from the agency.

We announced on July 18, 1996, at a News Conference about Workplace Violence at Hohman, that the Dayton City Prosecutor's office refused to take charges against a Hohman Foreman who assaulted a Union Member. Since that news conference, Dayton Law Director Tony Sawyer assigned a Special 'outside' Prosecutor to review improper conduct and to prosecute in this case if warranted.

The Union has also uncovered a serious concern for parts being certified and shipped for Federal contracts on military planes and helicopters that are not to specification and are non-conformance. In fact, reports that Hohman is certifying products for their customers such as load testing of Cadmium, Chromium and Copper. IUE 775's concern is that if any parts produced by Hohman Plating & Mfg. fails to comply with Customer and Specification conformance, our Quality Control Inspectors will be found culpable for Hohman's quality system's negligence. IUE 775 requested a written response from Bill Miller and Hohman Management verifying our Quality Control Inspectors will not be held responsible to Customer Products' Specifications when Hohman managers certify and ship products that are not in conformance. Absent such a response, IUE 775 will have no recourse but to request a Congressional investigation.

Hohman has not responded to our August 9 correspondence. We will therefore be contacting our District Congressional Office. IUE 775 will pursue the proper steps to correct this issue.

The IUE pledges to our members, we will expend whatever financial and other resources necessary to assure an environmentally safe and violence-free workplace. To the Dayton Community we pledge that we will make Hohman Plating & Mfg. a responsible corporate citizen who will not pollute the air or contaminate the Dayton Drinking Water Wellfield or the Dayton Sewer System.

Contact: Patt Duffy, AFL-CIO P. R. Director, 236-9670 Patricia Duffy

6/U8mw

FREUND, FREEZE & ARNOLD

A LEGAL PROFESSIONAL ASSOCIATION

One Dayton Centre • 1 South Main Street, Suite 1800 • Dayton, Ohio 45402-2017 • (937) 222-2424 • Fax: (937) 222-5369

Neil F Freund*
Stephen V Freeze*
Gordon D Arnold
Patrick J Janis
Francis S McDaniel
Stephen C Findley
Robert N Snyder
Christopher W Carrigg**
Susan Blasik-Miller
Scott F McDaniel*
Wayne E Waite
Lisa A Hesse
Mary E Lentz
Thomas B Bruns*
Shawn M Blatt
Thomas P Glass
August T Janszen*
Ray C Freudiger
Timothy J FitzGerald*
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In Cincinnati
8805 Governor's Hill Drive
Suite 300
Cincinnati, Ohio 45249-3313

Telephone (513) 583-3700
Fax (513) 583-3703

*Also admitted in Kentucky
**Also admitted in Maryland
***Also admitted in Illinois

December 27, 1996

Ohio Environmental Protection Agency
7 East Fourth Street
Dayton, OH 45402

Gentlemen:

This will advised that I represent the City of Dayton in connection with matters related to the Stony Hollow Landfill operated by Waste Management.

The enclosures claim that hazardous waste is being unlawfully disposed into the Stony Hollow Landfill. The citizens claim that there have been violations of state and federal laws by Hohman Manufacturing, Inc. and request that appropriate action be taken.

On behalf of the City of Dayton, I am bringing this matter to your attention for review and possible action.

In the event that you have any questions, feel free to call.

Very truly yours,

FREUND, FREEZE & ARNOLD

Neil F. Freund

clr
Enc.
c/enc. John Winship Read, Esq.
Montgomery County Combined Health District
RAPCA

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911
(513) 285-6357
FAX (513) 285-6249

George V. Voinovich
Governor

October 31,1996

RE: HOHMAN PLATING & MFG., INC.
HAZARDOUS WASTE
MONTGOMERY COUNTY
OHD 004 278 362
RETURN TO COMPLIANCE (RTC)
LQG

Hohman Plating & MFG., Inc.
Attn: Mr. Joe Sterling
814 Hillrose Avenue
Dayton, Ohio 45404

Dear Mr. Sterling

On October 30,1996, I conducted a return to compliance Inspection (RTC) of Hohman Plating Located at 814 Hillrose Avenue Dayton, Ohio. During this site inspection Violations noted on September 6, 1996 RCRA Compliance inspection were corrected. No new violations were noted.

Failure to cite specific violations in this correspondence does not relieve Hohman Plating from complying with all applicable regulations nor does it preclude this agency from citing these violations in the future.

Should you have any questions regarding the above RTC, please feel free to contact me at (937) 285-6088.

Sincerely,

George Nemore, Jr., R.S.
Division of Hazardous Waste Management

cc: Linda Neumann-Brown, DHWM,CO
SWDO FILES

Hohman Plating & Mfg., Inc.

814 HILLROSE AVENUE • DAYTON, OHIO 45404 • TELEPHONE 513-228-2191

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 5
To Marcy Ann McMullen	From George Nemore
Co Dayton Urban	Co. OEPA
Dept.	Phone # 11-27-96
Fax # 375-6056	Fax # Fixed

RECEIVED
OHIO EPA
SEP 24 1996
THWEST DISTRICT

September 20, 1996

Mr. George Nemore
Ohio Environmental Protection Agency
Division of Hazardous Waste Mana
Southwest District Office
401 E. Fifth Street
Dayton, Ohio 45402-2911

Post-it™ Fax Note 71	Date 11/15/96	# of pages ▸ 5
To Juliet Dowling	From Harold O'Connell	
Co./Dept	Co OEPA	
Phone # 225-2343	Phone # 285-6078	
Fax # 225-2752	Fax # 285-6249	

Dear Mr. Nemore,

This letter is in response to your investigation of an incident that occurred at our facility on September 17, 1996 Antonio Garrison, who is the second shift wastewater treatment technician had been directed by the first shift wastewater treatment technician, Mark Barkley, to pump hydrochloric acid to the rooftop acid storage tank. The rooftop tank is used to store process hydrochloric acid for use in the plating tanks throughout the facility. Hydrochloric acid is pumped from 250 gallon totes to the rooftop tank. The pumping operation takes place in the Wastewater Treatment Department and is performed by the wastewater treatment technicians.

Unfortunately Antonio Garrison, attached a tote of sulfuric acid instead of hydrochloric acid to the pump for transport to the rooftop tank. The rooftop tank still contained some hydrochloric acid and when the sulfuric acid was introduced to the tank, a chemical reaction took place. Fumes were generated in the storage tank, which vented back to our acid exhaust equipment. The second shift foreman felt that it would be best to instruct the employees to wait outside until the fumes were totally controlled

There was not an acid spill at either the rooftop tank or in the Waste Treatment Department The sulfuric acid was drained from the rooftop tank to 55 gallon drums located in the Waste Treatment Department The drums are currently being stored in Waste Treatment and the sulfuric acid will be used as a reagent in our wastewater treatment system

Hohman Plating & Mfg., Inc.

814 HILLROSE AVENUE • DAYTON, OHIO 45404 • TELEPHONE 513-228-2191

I am sorry that your office was contacted regarding this incident. It is unfortunate that the incident occurred, but the incident was controlled, and at no time was there a spill of any form. The employee will receive disciplinary action from our Human Resources Department and I do not see this incident occurring again.
Again, I apologize for any inconvenience that this incident has caused you and your office. If I can be of any further assistance, please do not hesitate to contact me.

Respectfully,

Joe Sterling
Environmental & Safety Manager

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911
(513) 285-6357
FAX (513) 285-6249

George V. Voinovich
Governor

September 12, 1996

RE: HOHMAN PLATING & MFG., Inc.
HAZARDOUS WASTE
MONTGOMERY COUNTY
OHD 004 278 362
LQG

Mr. Joe Sterling
Environmental & Safety Manager
Hohman Plating & Mfg., Inc.
814 Hillrose Avenue
Dayton, Ohio 45404

Dear Mr. Sterling:

On September 6, 1996 Mr. Pat Willoughby and I, of the Southwest District office Ohio EPA Division of Hazardous Waste Management, met with you to conduct a RCRA inspection to determine the compliance status of Hohman Plating with state and federal hazardous waste rules and regulations. In addition, I conducted a RCRA Land Disposal Restriction Inspection. Copies of the completed checklists are attached for your review.

During the inspection and subsequent paperwork review it was determined that Hohman Plating was in violation of the following state and Federal hazardous waste rules and regulations.

1. **Inspections, OAC 3745-66-74(A)(B).** This rule requires the generator to inspect areas where containers are stored, at least weekly, looking for problems with the containers, such as leaks and deterioration. Also, this rule requires the generator to record inspections in an inspection log or summary. The information in the inspection log or summary shall include the date and time of the inspection, the inspectors name, a notation of the observations made, and the date and nature of any repairs or other remedial action.

   Hohman failed to conduct **weekly** inspections of the hazardous waste storage areas. To address this violation, weekly inspections must be conducted and inspection information recorded on logs that contain the required information. To address this violation, please submit a copy of two weeks of storage area inspection logs by October 7, 1996.

2. **Management of Containers; OAC 3745-66-73(A).** This rule requires that all containers holding hazardous waste be closed during storage, except when it is necessary to add or remove waste. The 55 gallon drum of waste descaler sludge found in the strip department in the satellite accumulation area was open. This violation was corrected during the inspection. In the future, the bung/ lid ring should be capped/closed unless material is being added.

3. **Personnel Training; OAC 3745-65-16 (A) (B) (C).** This rule requires the generator to provide personnel training program, including instruction in safe equipment operation and emergency procedures, and implementation of the contingency plan [3745-52-34 (A) (4)].

   Hohman 's was also found in violation of not providing personnel training to new employees within 6 months after the date of employment. Hohman's failed to provided annual refresher training course . Hohman's must keep all the records required by 3745-65-16 (D) (E) including;
   written job titles, job description and documented employee training records [3745-52-34 (A) (4)].

   Hohman may provide evidence of compliance with personnel training requirement by submitting documentation to OEPA within 35 days of receipt of this letter.

Failure to list specific violations in this document does not relieve Hohman Plating of the responsibility of complying with all applicable state and federal hazardous waste rules.

If you have any questions please feel free to call me at (513) 285-6357.

Sincerely,

George Nemore

George Nemore, R.S.
Division of Hazardous Waste Management

GN/rm

cc: Linda Neumann-Brown, DHWM/CO
Tina Jennings, DHWM/CO
SWDO Files

Southwest Montgomery County Environmental League
1056 Cambridge Station Road
Dayton, Ohio 45458
(513) 436 5875

December 9, 1996

Memorandum: Hazardous Waste being disposed in Stony Hollow Landfill.

Based on statements of employees of Hohman Plating & Mfg. Inc. it appears that hazardous waste is being sent to the Stony Hollow Landfill. This is a violation of Paragraph 12 on page 8 of the SETTLEMENT AGREEMENT with Waste Management of Ohio Inc. which states:

> " 12. WMO agrees that no waste classified as hazardous waste and/or hazardous substance(s) under applicable state and federal laws and regulations may be disposed of at the Facility nor shall WMO and/or Waste Management of North America, Inc., apply for authority to dispose of hazardous waste at the Facility."

According to the information obtained the hazardous waste is being placed in the dumpster and being collected by IWD (Industrial Waste Disposal) and dumped into the Stony Hollow Landfill. It is further understood that IWD is a subsidiary of Waste Management.

Request that an immediate investigation be conducted by:

1. the City of Dayton to determine whether the SETTLEMENT has been violated.
2. the Ohio EPA to determine whether State laws and/or regulations have been violated.
3. the U.S. EPA to determine whether Federal laws and/or regulations have been violated.

It is further requested the amount of hazardous waste that has been disposed of in the Stony Hollow Landfill be determined, and immediate cleanup action be taken. That action should include the removal of such waste from the landfill.

It is also requested that it be determined whether there have been violations of State and Federal laws and regulations by Holman Mfg. Inc. and appropriate action be taken. That action should include protection from reprisal against anyone who furnished the enclosed information.

James L. Lowery
Leonard J. Howard

BACKGROUND DATA SUPPORTING REQUEST

SOURCE OF WASTE: HOHMAN PLATING & Mfg. Inc.
814 Hillrose Ave.
Dayton OH. 45404

Statements before Notary on December 5, 1996.

Tim Howell
Jason Wilson
Robert (Jay) Hill
Gregg Harshman
Russell E. Bennett
James Dwayne Conley
Antonio Garrison
Daryl ~~Sawyer~~ SANGER
Chad E. Leach
Matthew O. Gretinski
Jason Wilson

STATEMENT

December 5, 1996

My name is Tim Howell. I am an hourly employee at Hohman Plating & Mfg., Inc., 814 Hillrose Avenue, Dayton, OH 45404.

I do swear that regarding the procedure of throwing away empty bags from of chemicals. It was standard practice to empty the bags and put them straight into the trash. This happened before I became add technician and continued until 2 weeks ago when I took it upon myself to take empty bags to waste treatment fro disposal. No one has instructed me or anyone else on the proper disposal of empty bags of chemicals.

I swear the above account is true as the statements were made and events transpired. I also swear that I sign this statement of my own free will; no one forced me to do so.

(see attached) _____ _____ _____

Signature SS# Date

_____

Name (printed) Address

NOTARY

Tim Howell appeared before me this 5th day of December, 1996, and swore the above statement to be true.

Patricia E Duffy (SEAL)

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

8-27-96

To whom it may concern

Regarding the procedure of throwing away empty bags from chemicals. It was standard practice to empty the bags and put them straight into the trash. This happened before I became add technician and continued until 2 wks ago when I took it upon myself to take empty bags to waste treatment for disposal. No one has ever instructed me or anyone else on the proper disposal of empty bags of chemicals

Signed

Jim Howell

8-27-96

STATEMENT

December 5, 1996

My name is Jason Wilson. I am an hourly employee at Hohman Plating & Mfg., Inc., 814 Hillrose Avenue, Dayton, OH 45404.

I do swear that Jerry Middleton said, "If Mark Barkley told you to throw the caustic bags in the trash then throw the bags in the trash!" So I threw caustic bags in the trash.

I swear the above account is true as the statements were made and events transpired. I also swear that I sign this statement of my own free will; no one forced me to do so.

(see attached)
Signature

SS#

Date

Name (printed)

Address

NOTARY

_____ appeared before me this 5th day of December. 1996, and swore the above statement to be true.

Patricia E. Duffy (SEAL)

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

10-17-96

JERRY MIDDLETON SAID, "IF MARK B. told you to throw the CAUSTIC BAGS IN THE TRASH THEN THROW THE BAGS IN THE TRASH! So I throw CAUSTIC BAGS IN THE TRASH.

Jason Wilson

STATEMENT

December 5, 1996

My name is Robert (Jay) Hill. I am an hourly employee at Hohman Plating & Mfg., Inc., 814 Hillrose Avenue, Dayton, OH 45404.

I do swear that I have worked at Hohman Plating & Mfg. for over 11 yrs. Up until aprox. April of 96 I've repaired all of the racks in house; when rack tips need replaced due to plating build up I would cut or unbolt them off and throw them in the trash can. I was instructed to throw thick build up of materials like Cadmium, Lead, Cynide Zinc, Cynide Copper in the trash by my supervisor Rick Vance, maintenance. Supervisor Jerry Middilton on numerous Occasions.

I have also witnessed new employees told to throw Hard Chrome drums full of tape covered Hard Chrome into the dumpster outside. I have witnessed the cleaning people take out contaminated trash out on their carts.

I swear the above account is true as the statements were made and events transpired. I also swear that I sign this statement of my own free will; no one forced me to do so.

Robert (Jay) Hill
Signature (See attached)

SS#

Date

Name (printed)

Address

NOTARY

Robert (Jay) Hill appeared before me this 5th day of December, 1996, and swore the above statement to be true.

Patricia E Duffy

(SEAL)

PATRICIA E DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

STATEMENT

December 5, 1996

My name is Gregg Harshman. I am an hourly employee at Hohman Plating & Mfg., Inc., 814 Hillrose Avenue, Dayton, OH 45404.

I do swear that during most of the calendar year of 1995 my duties in the phosphate dept. were to clean maganase phosphate build up off of heating coils (steam pipe and elec.) witch resulted in aprox. 10lb to 25lb every two (2) weeks dumped into the dumpster.

I also helped Russ Bennett dump used blasting grit from grit basters for production and maintenance use. Mainly the maintenance blaster has just about every chemical in the house on equipment being cleaned and dumped untreated into the dumpster.

I swear the above account is true as the statements were made and events transpired. I also swear that I sign this statement of my own free will; no one forced me to do so.

(see attached) _____ _____

Signature SS# Date

_____

Name (printed) Address

NOTARY

Gregg Harshman appeared before me this 5th day of December, 1996, and swore the above statement to be true.

Patricia E Duffy (SEAL)

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

STATEMENT

December 5, 1996

My name is Russell E. Bennett. I am an hourly employee at Hohman Plating & Mfg., Inc., 814 Hillrose Avenue, Dayton, OH 45404.

I do swear that I have swept the floors for six (6) years throwing it into the dumpster along with all the trash.

I swear the above account is true as the statements were made and events transpired. I also swear that I sign this statement of my own free will; no one forced me to do so.

(see attached)
Signature

SS#

Date

Name (printed)

Address

NOTARY

Russell E. Bennett appeared before me this 5th day of December 1996, and swore the above statement to be true.

Patricia E. Duffy (SEAL)

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

I have work for the lab and maintance Depts in the past at Hohman Plating.

on sevual times I would spill drip chemicals on the floor and just sweep them up and put them in the trash and latter it would Be thrown in the Dumpster.

also if I had a wet chemical spill I would use floor dry on it and sweep it up and throw it into the trash. the and latter it would be put directly into the I.W.D. Domster.

James Dwayne Conley.

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

Patricia E Duffy

12-5-96

There were soak cleaners, electro cleaner bags, along with caustic soda bags, ~~floor~~ Hy-dri just got swept up and thrown away with normal trash. Lime bags were thrown away in the trash without being treated, sulfiric acid when spilled also bleach and any other chemical such as muratic were rinsed down the drains sometimes causing fumes that would irratate ones breathing and eye sight.

Antonio Garrison
Antonio Garrison
12-5-96

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

Patricia E Duffy
12-5-96

I work in Prec. Metals and I put nickel CHips in the Sulf nickel Tank, and the Elect Plating nickel tank and I have put the NICKEL bags in the trash BARREL, AND THE People who would collect HOFFMAN [redacted] AT NIGHT. TAKE THE BARREL THAT HAD THE NICKEL BAGS IN AND THROUGHT IT AWAY. THIS HAPPEN A LOT OF TIMES. [redacted] ALSO I would PUT ACID IN THE NICKEL SULFAMIC TANK IN BOTH TANKS AND PUT THE empty BAGS IN THE TRASH. WHEN I would WORK IN HARD CHROME I would PEEL THE PARTS OUT OF HARD CHROME TANKS AND UNMASK THE PARTS AND [redacted] THROUGH THE TAPE IN THE TRASH & RAGS TOO, [redacted]

Daryl Sawyer

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

Patricia E. Duffy

During my employment at Hohman Plating, I was often involved in making adds to several of the plating tanks. I was never instructed on what to do with the bags in which several of the chemicals were contained. Therefore, I often disposed of the bags into the area trash receptacles, which are then taken by the janitor to the outside dumpster. Some of the bags which I threw into these receptacles housed chemicals such as nickel chloride, nickel sulfate, caustic cleaners containing sodium hydroxide (technical names include Saak 028 and Colec 526), sulfamic acid, granular and powdered carbon, [redacted] boric acid, ammonium chloride, and sodium hydroxide. Another of my responsibilities was to periodically change cartridge filters on our copper cyanide, silver cyanide, black dye, and nickel acetate baths. These polypropylene cartridges were used to filter the baths for one, two, or four weeks. Upon changing these filters, I disposed of the cartridges into the area trash receptacles which were then taken directly outside by the janitor.

Chad E. Leech

Chad E. Leech

12-5-96

PATRICIA E DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

12-5-96

I work in the Spray Room. Up until Nov of 96 all ~~Spray~~ containers were deposited in the trash & taken to The dumpster with the exception of 5gal containers. These containers held volatile solvents & Resins. All booth liners up until this time frame were treated in the same manner.

Matt Grebinski
Matthew A Grebinski

Patricia E. Duffy

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

DEC 5, 1996

WHEN I would do trash, I would would throw all trash IN dumpster including hard chrome. I WAS NEVER told ANY DIFFERENT.

Patricia E. Duffy

PATRICIA E. DUFFY, Notary Public
In and for the State of Ohio
My Commission Expires July 2, 1997

12-5-96

MEMO from the IUE Local 775 President
August 12, 1996

Attn: Harold D Conwell
(573) 285-6249
6 pages

Ohio Environmental Protection Agency

Hohman Plating & Mfg., Inc.
814 Hillrose Avenue
Dayton, OH 45404

- Zinc Cyanide Rinse Tanks located inside building, leaking through crack in foundation on East side of building

- Nitric, Sulfuric, Hydrofluoric Triadic Etch – producing reddish, orange smoke and fumes from rooftop scrubbers after every seven (7) to ten (10) minute cycle. *Per Mike Watkins & J. Dwayne Conley*

- Muriatic or Hydrochloric Acid – not secure on top of building. (Could possibly dump onto street, gutters and employees. There was a chemical spill last winter (1995) from this location. *Per J. Dwayne Conley, William Henry and OSHA Inspector*

- Reports of procedures when Waste Treatment Area backs-up or overloads – the Company opens up discharge valves and bypasses Waste Treatment System thereby dumping directly into City Sewers. *Refer Tim Swafford*

Local 775

ESLEY WELLS - President ROBERT PRICE — Vice President JESSE CECIL — Financial Secretary Treasurer

News Release -- Immediate -- Tuesday, August 13, 1996

Statement of Wesley Wells, President, IUE Local 775

As we informed you on August 3, 1996, the Federal Mediator, Steve Anderson, invoked a 14-day 'Cooling Off' period beginning on August 3 and continuing through August 17, 1996. The Union still had the right to invoke strike intention notification within seven (7) days after August 3; and the unrestrained right of the Union to pursue Safety Violations with the Occupational Safety & Health Agency (OSHA) and the Ohio Environmental Protection Agency (EPA).

On Friday, August 2, 1996, we notified the Regional OSHA office (copy attached) and Regional Director William Murphy assigned two OSHA Compliance Officers to investigate the Union's safety issues at Hohman Plating & Mfg., 814 Hillrose Avenue in Dayton. The Compliance Officers arrived at Hohman on Wednesday, August 7, 1996.

Since their arrival, the numbers of violations being uncovered by the Compliance Officers and IUE Local 775 Safety Director are astonishing. Two (2) distinct Imminent Danger Violations were detected, and absolutely appalling numbers of safety hazards. Safety hazards that involve volatile chemicals used by the company in its plating processes and the employees exposure to them. The OSHA Compliance Officers stated to our IUE 775 Safety Representatives that they expect to be on site for at least two (2) weeks.

Our IUE 775 Safety Personnel uncovered a remarkable number of what they feel are EPA violations by Hohman to the environment and possibly Dayton's Well Field. On the afternoon of August 12, 1996, we notified the Ohio EPA by telephone and were advised that an Agent would be assigned. Prior to the news conference this morning we have not heard from the agency.

We announced on July 18, 1996, at a News Conference about Workplace Violence at Hohman, that the Dayton City Prosecutor's office refused to take charges against a Hohman Foreman who assaulted a Union Member. Since that news conference, Dayton Law Director Tony Sawyer assigned a Special 'outside' Prosecutor to review improper conduct and to prosecute in this case if warranted.

The Union has also uncovered a serious concern for parts being certified and shipped for Federal contracts on military planes and helicopters that are not to specification and are non-conformance. In fact, reports that Hohman is certifying products for their customers such as load testing of Cadmium, Chromium and Copper. IUE 775's concern is that if any parts produced by Hohman Plating & Mfg. fails to comply with Customer and Specification conformance, our Quality Control Inspectors will be found culpable for Hohman's quality system's negligence. IUE 775 requested a written response from Bill Miller and Hohman Management verifying our Quality Control Inspectors will not be held responsible to Customer Products' Specifications when Hohman managers certify and ship products that are not in conformance. Absent such a response, IUE 775 will have no recourse but to request a Congressional investigation.

Hohman has not responded to our August 9 correspondence. We will therefore be contacting our District Congressional Office. IUE 775 will pursue the proper steps to correct this issue.

The IUE pledges to our members, we will expend whatever financial and other resources necessary to assure an environmentally safe and violence-free workplace. To the Dayton Community we pledge that we will make Hohman Plating & Mfg. a responsible corporate citizen who will not pollute the air or contaminate the Dayton Drinking Water Wellfield or the Dayton Sewer System.

Contact: Patt Duffy, AFL-CIO P. R. Director, 236-9670 Patricia Duffy

ATTACHMENT 7

OhioEPA

Re: Montgomery County
Hazardous Materials
TRW Inc.
OHD041066325
G

New file

Mr. Ike Beediwala
TRW Incorporated
1784 Stanley Avenue
Dayton, Ohio 45404

February 7, 1984

Dear Mr. Beediwala:

On 1 February 1984, this office conducted an inspection of your facility to determine your compliance with the Ohio Hazardous Waste Rules. During the inspection it was determined that your facility is a generator with storage of less than 90 days. The following is a list of violations found during the inspection:

(OAC - Ohio Administrative Code)

OAC 3745-52-34(A)(2)	The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container;
(A)(3)	While being accumulated on-site, each container and tank is labeled or marked clearly with the words "Hazardous Waste"; and
(A)(4)	The generator complies with the requirements for owners or operators concerning "Preparedness and prevention" and "Contingency Plan and Emergency Procedures" in Chapter 3745-65 of the OAC and with Rule 3745-65-16 of the OAC
OAC 3745-65-16	Personnel Training Plan
OAC 3745-65-35	Adequate aisle space shall be maintained to insure access to each drum during an emergency

Re: Montgomery County
Hazardous Materials
TRW, Incorporated
OHD041066325
G

Mr. Ike Beediwala
TRW, Incorporated
1784 Stanley Avenue
Dayton, Ohio 45404

April 16, 1984

Dear Mr. Beediwala:

On 13 April 1984, I visited your facility to determine your progress in meeting your compliance date of 7 May 1984. During the visit, I found the following violations cited in my 7 February 1984 letter corrected:

OAC 3745-52-34(A)(2)	Accumulation start date
(A)(3)	Marking drums with the words "hazardous waste"
OAC 3745-65-35	Adequate aisle space

The remaining violations are still outstanding but progress was noted.

If you have any questions, please feel free to contact me at (513) 461-4670.

Sincerely,

David P. Duell
Hazardous Materials Management

DPD:lmr

cc: Paula Cotter, OEPA, DHMM

Re: Montgomery County
Hazardous Materials
TRW, Incorporated
OHD 041066325
G

Mr. Ike Beediwala
TRW, Incorporated
1784 Stanley Avenue
Dayton, Ohio 45404

June 8, 1984

Dear Mr. Beediwala:

This is to acknowledge receipt and review of your draft contingency plan and personnel training plan. The review shows the following items should be added to each plan:

1. A schedule of how often training will occur for existing employees and initial training for new employess,

2. Include the names, job title and job description of those employees actually involved in the handling of hazardous wastes.

3. Sections 5.1 and 5.4 need to be detailed more as to the decision making process,

4. Change Ohio EPA emergency phone number to 1-800-282-9378.

The above changes must be incorporated into a final document and submitted to this office by 29 June 1984.

If you have any questions, please feel free to contact me.

Sincerely,

David P. Duell
Solid and Hazardous Waste Management

DPD:lmr

Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402-2086
(513) 461-4670

Re: Montgomery County
Hazardous Wastes
TRW, Incorporated
OHD 041066325
G

Mr. Ike Beediwala
TRW, Incorporated
1784 Stanley Avenue
Dayton, Ohio 45404

July 11, 1984

Dear Mr. Beediwala:

This is to acknowledge receipt and review of your recently submitted Contingency Plan as required by the Ohio Hazardous Waste Rules. A detailed review of the plan shows it to be in compliance with the present rules.

Your facility is now in substantial compliance with the Ohio Hazardous Waste Rules.

If you have any questions, please feel free to contact me if you have any questions.

Sincerely,

David P. Duell
Solid and Hazardous Waste Management

DPD:lmr

cc: Paula Cotter, DSHWM, Central Office

Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402-2086
(513) 461-4670

OHIO ENVIRONMENTAL PROTECTION AGENCY Action Code _____

GENERATOR ANNUAL HAZARDOUS WASTE REPORT (cont.)

For the calendar year ending December 31, 19 85

FACILITY INFORMATION
(specify facility to which all wastes on the page were sent)

VIII. GENERATOR'S EPA I.D. NO.
T/AC
OHD041063252

IX. FACILITY'S EPA I.D. NO.

X. FACILITY NAME
ECOLOTEC INC

XI. FACILITY'S ADDRESS

6316 NIRWIN STREET
Street or P.O. Box

DAYTON OH 45405
City or Town State/Zip Code

XII. WASTE IDENTIFICATION

Line	A. DESCRIPTION OF WASTE	B. DOT HAZARD CLASS	C. USEPA HAZARDOUS WASTE NUMBER (see instructions)	D. AMOUNT OF WASTE	E. UNITS OF MEASURE
1	NITRIC ACID-AMMONIUM BIFLUORIDE	16 02	D002 D003	17050	P
2	MURIATIC ACID 50-50	02	D002	2200	P
3	SULFURIC ACID	02	D002	2750	P
4	CHROMIC ACID	02	D002	4950	P
5	COOLANT-WATER	none	Non hazardous	81840	P
6	MIXED SOLVENTS	01	D001	4620	P
7	STODDARD SOLVENT	01	D001	4235	P
8	1,1,1,TRICHLOROETHYLENE		F001	7150	P

XIII. COMMENTS (enter information by section number)

see lines 9, 10 and 11 on next page

O'BRIEN & GERE

April 25, 1986 OVERNIGHT DELIVERY

Mr. Ike Beediwala
Plant Engineer
Motor Division
TRW Electronic Components Group
1784 Stanley Avenue
Dayton, OH 45404

Re: Soil Sample Analytical Results

File: 2795.017 #2

Dear Mr. Beediwala:

Enclosed please find the analytical results of soil samples collected during the underground storage tank removal work on April 4, 1986. For each of the parameters analyzed, the concentrations indicated were well below the limits for RCRA hazardous waste levels as defined by the U.S. Environmental Protection Agency (USEPA). A summary of the analytical results is as follows:

Sample I.D. No.	Sample Location	Analytical Parameter	Analytical Results
Soil No. 1	Excavated Soil Stockpile	Total Solids	82.38%
		Total PCBs	<.05 mg/kg
		EP Toxicity: (all results in mg/kg)	
		Silver	<0.03
		Barium	0.750
		Cadmium	<0.020
		Chromium	0.068
		Arsenic	<0.025
		Mercury	<0.002
		Lead	<0.200
		Selenium	<0.025
Soil No. 2	Soil Left in Place	Oil and Grease	271 mg/kg
		Total Solids	82.4%
Soil No. 3	Soil Left in Place	Oil and Grease	136 mg/kg
		Total Solids	88.7%

The results for the stockpiled soils should be reported on the "Solid Waste Disposal Questionnaire" form required by the Ohio EPA. This form must be completed and approved by the Ohio EPA prior to disposal of the stockpiled soil.

Should you have further questions about the form or other aspects of the project, please do not hesitate to call Craig Butler or me.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

G. David Knowles

G. David Knowles, P.E., L.S.
Managing Engineer

CFB/kag

cc: C. T. Bingham - TRW, Corporate
C. B. Murphy, Jr. - O'Brien & Gere

BCM Laboratory Division
521 W GERMANTOWN PIKE
NORRISTOWN, PA 19401
215-825-0447

PLEASE REMIT CHECKS TO:
BCM Eastern Inc.
1 PLYMOUTH MEETING
PLYMOUTH MEETING, PA 19462
215-825-3800

TRW - Dayton, OH
2795.017 125

CLIENT

O'Brian & Gere
Attn: Craig Butler
One Valley Square, Suite 200
512 Townshipline Road
Blue Bell, PA 19422

DATE : 04/18/86
BCM # : - -
P.O.# :
ORDER : 04796

FINAL REPORT

PAGE : 1

This is the final report for the samples shown below. If you have any questions concerning this report please call 215-825-0447.

BCM NUMBER		606663	606664
CLIENT SAMPLE ID		1	2
DATE SAMPLED		04/04/86	04/04/86
DATE RECEIVED		04/08/86	04/08/86
METHOD AND TEST	UNITS	RESULTS	RESULTS
6 Oil & Grease (Freon Extractables)	mg/kg	271	136
48 Total Solids	%	82.4	88.7

LAB CERTIFICATION:

EPA/FA - #38007 NJ - #77175 AL - #40300 EPA BULK ASBESTOS QC - #3339 AIHA/NIOSH - #241/19401

METHOD	DESCRIPTION	METHOD	DESCRIPTION
6	EPA # 413.1	48	EPA # 160.3

<* END OF REPORT *>

RECEIVED
APR 21 1986
O'BRIEN & GERE
PHILADELPHIA, PA.

OhioEPA
State Of Ohio Environmental Protection Agency
Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402-2086
(513) 449-6357
Richard F Celeste, Governor

April 30, 1986

Re: SOIL SAMPLES
TRW, INC.
OHD041066325
G

Mr. Ike Beediwala
TRW, Inc.
1784 Stanley Avenue
Dayton, OH 45404

Dear Mr. Beediwala:

After reviewing the soil sample results, we have concluded this material to be disposed of at any sanitary landfill site.

If you have any questions please contact me directly at (513) 449-6357.

Cordially,

Richard Robertson

Richard Robertson
Solid & Hazardous Waste Management Unit

RR/lal

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402-2086
(513) 449-6357

Toward A Cleaner Environment
15 Year Anniversary 1972 1987

Richard F Celeste
Governor

June 24, 1988

Re: TRW INC., GLOBE MOTORS
HAZARDOUS WASTE MANAGEMENT
OHD 041 066 325
MONTGOMERY COUNTY
GENERATOR

Mr. Ike Beediwala
Plant Engineer
TRW Inc.
1784 Stanley Ave.
Dayton, Ohio 45404

Dear Mr. Beediwala:

On June 22, 1988, I visited your facility to conduct a Hazardous Waste Generator Inspection in accordance with State and Federal Hazardous Waste Rules and Regulations.

During the compliance inspection, the following violations/deficiencies were found (OAC - Ohio Administrative Code, CFR - Code of Federal Regulations):

1. The containers located at the accumulation area were not being provided with adequate aisle space to allow unobstructed movement of emergency or spill control equipment. This is a requirement of CFR 265.35 and OAC 3745-65-35. To correct this violation, your company must provide the necessary aisle space immediately.

2. There were seven containers that were being stored beyond the 90 days accumulation limit for a generator. The applicable requirements are CFR 262.34 and OAC 3745-52-34. Storage of hazardous waste beyond the 90 days requires a hazardous waste storage permit. To correct this violation, your company must have all containers that are beyond the 90 days taken off-site to a permitted facility by July 23. Photocopy(ies) of the hazardous waste manifest must be received in this office by July 26.

3. Your company's weekly inspection log does not indicate any corrective measures taken against any problems occurring with containers. Even though one log in date showed a leaking drum,

the corrective measure was not recorded. This is a requirement of CFR 265.174 and 3745-66-74. To correct this deficiency, your company must prepare a new log where any corrective measures can be indicated on the form. Submit a photocopy to this office by July 26.

Having reviewed your company's hazardous waste manifests, there were no indications that any plating sludge wastes were being shipped off-site. Please clarify your company's plating process and the waste streams generated from it. Include the explanation along with the other requests.

On the day of the inspection, a RCRA Land Disposal Restriction Inspection was conducted. Your company's plating operation may be generating wastes indicated on the California List Wastes. Your company must submit sample analysis data of waste streams generated from the plating operation to this office by July 26. If there are no data available, please include an explanation as to why there are not any.

Failure to list any other violations/deficiencies does not relieve your company from meeting hazardous waste rules and regulations.

Any violations cited above may result in further enforcement by Ohio EPA or USEPA.

Please find enclosed photocopies of inspection forms used for your company.

Should you have any questions, I may be contacted at 449-6357.

Sincerely,

Chul Kim-McGuire

Chul Kim-McGuire
Division of Solid & Hazardous Waste Management

cc: Dave Sholtis, CO, DSHWM

6/22/88 1010
Date and Time of Inspection

RCRA INTERIM STATUS INSPECTION FORM

HWFAB #

GENERAL INFORMATION

U.S. EPA I.D. # OHD 004664325

Facility: TRW INC - GENERAL MOTORS Address: 1784 STANLEY AVE. City: DAYTON

State: Ohio Zip Code: 45404 County: MONTGOMERY Telephone: (513) 228-3171

INSPECTION PARTICIPANT(S)

	(Name)	(Title)	(Telephone)
1.	IKE BEEDINWALA	PLT. ENGINEER	(513) 228-3171 EXT. 390
2.	MARK SEITZ	MAINTENANCE TECH.	" "
3.	JACK PHILABAUM	" "	"

INSPECTOR(S)

1.	Cheryl Kim-McGuire	HWI/EEI	(513) 449-6357
2.			
3.			

INSTALLATION ACTIVITY

Mark One

- [X] Generator only (G)
- [ ] Transporter (T)
- [ ] TSDF only
- [ ] G-T
- [ ] G-TSDF
- [ ] T-TSDF
- [ ] G-T-TSDF

If the site is a TSDF, check the boxes indicating which areas were reviewed.

- [ ] General Facility Standards, Preparedness and Prevention, Contingency and Emergency Manifests/Records/Reporting, Closure
- [ ] Containers S01
- [ ] Tanks S02/T01
- [ ] Surface Impoundments S04/T02
- [ ] Incineration/Thermal Treatment
- [ ] Waste Piles S03
- [ ] Land Treatment D81
- [ ] Landfills D80
- [ ] Chemical/Physical/Biological T04
- [ ] Groundwater Monitoring
- [ ] Post-Closure

RCRA INTERIM STATUS INSPECTION FORM

	Yes	No	N/A	Remark #
1. Has the facility submitted a Part A to Ohio?	___	___	✓	___
2. If "yes", is it complete and accurate?	___	___	✓	___
3. Has the facility submitted a Part B?	___	___	✓	___
4. Was advance notice of the inspection given? If so, how far in advance?	___	✓	___	___

IF THE SITE HAS RECEIVED A PART B PERMIT, USE THE RCRA STATUS INSPECTION FORM.

REMARKS, GENERAL INFORMATION

Include a brief description of site activity and waste handling.

Previous inspection: 4/15/86

Manufactures meters (parts) for defense missiles

Waste streams { D001, D002, F001, F003
F005, F007

Uses { Safety-Kleen Corp. OHD980587364
Envirite, Inc. OHD980700942

Industrial Chemical Mgt. OHD981088545

F007 → Cyanochem, Inc MIDC980111992

A & B Industrial MID017167222

RCRA INTERIM STATUS INSPECTION FORM

40 CFR 262 (OAC 3745-52) GENERATOR REQUIREMENTS

	Yes	No	N/A	Remark #
1. The hazardous waste(s) generated at this facility have been tested or are acknowledged to be hazardous waste(s) as defined in Section 261 and in compliance with the requirements of Sections 262.11. [3745-52-11(D)]	✓			
2. Does this facility generate any hazardous wastes that are excluded from regulation under Section 261.4 [3745-51-04] (statutory exclusions) or Section 261.6 [3745-51-06(A)(1)] (recycle/reuse)?	✓			1,1,1 Trichloroethane Oil sludge bottoms sent out as hazardous waste
3. Does this facility have waste or waste treatment equipment that is excluded from regulation because of totally enclosed treatment (Section 265.1(c)(9)) [3745-65-01] or via operation of an elementary neutralization unit and/or wastewater treatment unit (Section 265.1(c)(10) [3745-65-01].		✓		
4. The generator meets the following requirements with respect to the preparation, use and retention of the hazardous waste manifest:				
a) The manifest form used contains all of the information required by Section 262.21(a) and (b) [3745-52-21] and the minimum number of copies required by Section 262.22 [3745-52-22].	✓			
b) The generator has designated at least one permitted disposal facility and has/will designate an alternate facility or instructions to return waste in compliance with Section 262.20 [3745-52-20(B)(C)(D)].	✓			
c) Prepared manifests have been signed by the generator and initial transporter in compliance with Section 262.23 [3745-52-23(A)(1 and 2)].	✓			
d) The generator has complied with manifest exception reporting requirements (investigate after 35 days, report after 45 days) in Section 262.42(a)(b) [3745-52-42].			✓	
e) Signed copies of all hazardous waste manifests and any documentation required for Exception Reports are retained for at least 3 years as required by Section 262.40 [3745-52-40]. (262.40(a)) [3745-52-40(a)]	✓			

	Yes	No	N/A	Remark #
5. The generator meets the following hazardous waste pre-transport requirements:				
a) Prior to offering hazardous wastes for transport off-site the waste material is packaged, labeled and marked in accord with applicable DOT regulations (Section 262.30, 262.31 and 262.32(a)) [3745-52-30, 3745-52-31, 3745-52-32]	✓			
b) Prior to offering hazardous wastes for transport off-site each container with a capacity of 110 gallons (416 liters) or less is affixed with a completed hazardous waste label as required by Section 262.32(b) [3745-52-32].	✓			
c) The generator meets requirements for properly placarding or offering to properly placard the initial transporter of the waste material in compliance with Section 262.33 [3745-52-33].	✓			
6. Hazardous wastes imported from or exported to foreign countries are handled in accordance with the requirements of Section 262.50 [3745-52-50]			✓	
*** (7.) If the generator elects to store hazardous waste on-site in containers or tanks for 90 days or less without a RCRA storage permit as provided under Section 262.34 [3745-52-34], the following requirements with respect to such storage are met: (SEE GENERATOR-PAGE 3)				
a) The containers are clearly marked with the words "Hazardous Waste".	✓			
b) The date that accumulation began is clearly marked on each container.	✓			
** (8) The generator has provided a Personnel Training Program in compliance with Section 265.16(a)(b)(c) [3745-65-16(A)(B)(C)] including instruction in safe equipment operation and emergency response procedures, training new employees within 6 months and providing an annual training program refresher course. (Section 262.34) [3745-52-34(A)(4)]	✓			Frequency - need to physically document the training?
9. The generator keeps all of the records required by Section 265.16(d)(e) [3745-65-16(D)(E)] including written job titles, job descriptions and documented employee training records (Section 262.34) [3745-52-34(A)(4)].	✓			

RCRA INTERIM STATUS INSPECTION FORM

NOTE: SHORT-TERM STORAGE FOR 90 DAYS OR LESS IN TANKS AND CONTAINERS ALSO REQUIRES THAT REGULATIONS IN SECTION 265 [3745-65], SUBPARTS C AND D (PREPAREDNESS AND PREVENTION PLUS CONTINGENCY AND EMERGENCY) AND CERTAIN PORTIONS OF THE "CONTAINERS" AND "TANKS" RULES BE MET. COMPLETE THE APPROPRIATE SECTIONS OF THE INSPECTION FORM.

REMARKS, GENERATOR REQUIREMENTS

On the day of the inspection the following were found in the storage compound:

1 Containers beyond 90-day Generator exclusion *

a) Accumulated drums with the following dates (12-87, 3-17-88, 2-2-88, waste flammable - 10/21/88); 55 gallon containers. 1,1,1 TCA

b) accumulated drums with the following dates (xylene - 12-4-87, 2-29-88, paint related material - 12/4/87); 30 gallon containers.

c) There were nine drums of acid wastes. No USEPA waste codes written on the hazardous waste label; however, it did contain DOT designations.

RCRA INTERIM STATUS INSPECTION FORM

Subpart C: Preparedness and Prevention

	Yes	No	N/A	Remark #
1. Has there been a fire, explosion or non-planned release of hazardous waste at this facility? (265.31) [3745-65-31]		✓		
2. If required due to actual hazards associated with the waste material, the facility has the following equipment: (265.32) [3745-65-32(A)(B)(C)(D)]				
a) Internal alarm system.	✓			
b) Access to telephone, radio or other device for summoning emergency assistance.	✓			ALARM
c) Portable fire control equipment.	✓			
d) Water of adequate volume and pressure via hoses sprinkler, foamers or sprayers.	✓			
3. All required safety, fire and communications equipment is tested and maintained as necessary; testing and maintenance are documented. (265.33) [3745-65-33]	✓			Monthly
4. If required due to the actual hazards associated with the waste material, personnel have immediate access to an emergency communication device during times when hazardous waste is being physically handled. (265.34) [3745-65-34]	✓			Alarm
** (5) If required due to the actual hazards associated with the waste material, adequate aisle space to allow unobstructed movement or emergency or spill control equipment is maintained. (265.35). [3745-65-35]		✓		
6. If required due to the actual hazards associated with the waste material, the facility has attempted to make appropriate arrangements with local emergency service authorities to familiarize them with the possible hazards and the facility layout. (265.37(a)) [3745-65-37(A)]	✓			
7. Where state or local emergency service authorities have declined to enter into any proposed special arrangements or agreements the refusal has been documented. (265.37(b)) [3745-65-37(B)]			✓	

Subpart D: Contingency and Emergency

	Yes	No	N/A	Remark #
1. The facility has a written Contingency Plan designed to minimize hazards from fire, explosions or unplanned releases of hazardous wastes (265.51) [3745-65-52(A)(B)(C)(D)(E)] and contains the following components:				
a) Actions to be taken by personnel in the event of an emergency incident.	✓			
b) Arrangements or agreements with local or state emergency authorities.	✓			
c) Names, addresses and telephone numbers of all persons qualified to act as emergency coordinator.	✓			
d) A list of all emergency equipment including location, physical description and outline of capabilities.	✓			
e) If required due to the actual hazards associated with the waste(s) handled, an evacuation plan for facility personnel. (265.51(f)) [3745-65-52(F)]	✓			
2. A copy of the Contingency Plan and any plan revisions is maintained on-site and has been submitted to all local and (state) emergency service authorities that might be required to participate in the execution of the plan. (265.53) [3745-65-53(A)(B)]	✓			
3. The plan is revised in response to facility, equipment and personnel changes or failure of the plan. (265.54) [3745-65-54]			✓	
4. An emergency coordinator is designated at all times (on-site or on-call) is familiar with all aspects of site operation and emergency procedures and has the authority to implement all aspects of the Contingency Plan. (265.56) [3745-65-55]	✓			
5. If an emergency situation has occurred, the emergency coordinator has implemented all or part of the Contingency Plan and has taken all of the actions and made all of the notifications deemed necessary under Sections 265.56(a-j). [3745-65-56(A-J)]			✓	

RCRA INTERIM STATUS INSPECTION FORM

Subpart I: Management of Containers

	Yes	No	N/A	Remark #
1. Hazardous wastes are stored in containers which are:				
a) Closed (265.173) [3745-66-73(A)]	✓			
b) In good physical condition (265.171) [3745-66-71]	✓			
c) Compatible with the wastes stored in them (265.172) [3745-66-72]	✓			
2. Containers are stored closed except when it is necessary to add or remove wastes. (265.173(a)) [3745-66-73(A)]	✓			
3. Hazardous waste containers are stored, handled and opened in a manner which prevents container rupture or leakage. (265.173(b)) [3745-66-73(B)]	✓			
** (4) The area where containers are stored is inspected for evidence of leaks or corrosion at least weekly and such inspections are documented. (265.174) [3745-66-74]	✓			inadequate
5. Containers holding Ignitable or Reactive waste(s) are located at least 50 feet (15 meters) from the property line and the general requirements for handling such wastes in Section 265.17 (physical separation, signs and safety) are met (265.176) [3745-66-76]	✓			
6. Containers holding hazardous wastes are stored separate from other materials which may interact with the waste in a hazardous manner. (265.177(c)) [3745-66-77(C)]	✓			

GLOBE MOTORS

2275 Stanley Avenue
Dayton, Ohio 45404
513-228-3171
TWX 810-459-1642
TELEX: 288224
FAX 513-229-8531

July 20, 1988

Mr. Chul Kim-McGuire
Div. of Solid & Hazardous Waste Management
Ohio EPA
Southwest District Office
7 East 4th Street
Dayton, OH 45402-2086

Re: Your letter dated June 24, 1988

Dear Mr. McGuire:

Following is the itemized list of violations/deficiencies found during your inspection of our 1784 Stanley Avenue facility on June 22, 1988, and corrective measures which have been taken to comply in accordance with regulations.

1. The containers located at the accumulation area without adequate aisle space.

   This violation has been corrected by rearrangement of stored drums. Sample pictures are attached for example.

2. Seven containers stored beyond the 90 days accumulation limit for a generator.

   The following containers, including the seven above, were transported to off-site permitted facilities for disposal as noted:

Item	Manifest #	# Drums	Description	Ship Date	Facility
1	01033	1	Waste Xylene	6-23-88	Ecolotec,Inc.
2	01033	1	Waste Xylene	6-23-88	Ecolotec,Inc.
3	01033	1	Flammable Liquid	6-23-88	Ecolotec,Inc.
4	01033	1	Waste Paint	6-23-88	Ecolotec,Inc.
5	01034	4	Stoddard Solvent	7-08-88	Safety Kleen
6	01034	8	Trichloroethane 111	7-08-88	Safety Kleen
7	01036	2	Varnish-Flammable	7-19-88	Ecolotec,Inc.

   Photocopies of above hazardous waste manifests are attached.

3. Our company's weekly inspection log did not indicate any corrective measures taken against any problems occurring with containers.

   Our company has corrected this deficiency by preparing a new log, where corrective measures have been indicated on the form. This log went into effect the week of 7-18-88. A photocopy of this form is attached.

In addition to the above three items listed, there were two questions you addressed which we have attempted to clarify below:

A. Our company's plating process, which generates an effluent wastewater stream, does not go through any waste treatment prior to discharge into POTW. Therefore, no plating sludge waste of any kind is being generated. Our waste stream is in complete compliance with federal and local pretreatment standards. We are required by the City of Dayton to file a monthly self-monitoring report. The latest copy of one such report is attached. We are also required to submit a monthly report form to the Ohio EPA on our storm sewer under the requirement of NPDES permit No. 1IN00038001. The latest copy of one such report is attached.

B. The waste generated from our plating operation gets analyzed by the TSD facilities before it is shipped and RCRA's Land Disposal Restriction (F Solvent) and California List Waste are properly identified. We do not always receive a copy of the sample analysis from TSD if it has already been analyzed recently and is typical of sampled waste. We maintain copies of recent analysis of typical waste copies which are attached. Also attached are copies of Land Disposal Restriction and California List Waste forms, which get accompanied to the appropriate manifests.

We hope that the above corrective actions, explanations and the attached supporting documentation will relieve our company from the violations/deficiencies listed from your inspection.

Please contact us at (513) 228-3171, Ext. 390 for any questions you may have. Your written response will be appreciated.

Sincerely,

Ike Beediwala,
Plant Engineer

cc: Steve McHenry
Wayne Chelius

Attachments

IB/jaa

File

TRW Motors

OhioEPA

State Of Ohio Environmental Protection Agency

Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402-2086

(513) 449-6357

Richard F Celeste, Governor

July 10, 1986

Mr. Pete Capponi
O'Brien-Gere Engineers
1304 Buckley Road
Syracuse, New York 13221

Dear Mr. Capponi:

After reviewing the soil sample results from TRW, Inc. on 1784 Stanley Avenue, Dayton, Ohio, we have determined them to not be contaminated. These soils may remain in situ or used as fill.

If you have any questions concerning this matter, please contact me directly at (513) 449-6357.

Cordially,

Richard Robertson

Richard Robertson
Solid and Hazardous Waste Management Unit

RR/dkp

cc: Ike Beediwala, TRW, Inc.

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402-2086
(513) 449-6357

Toward A Cleaner Environment
15 Year Anniversary
1972 - 1987

Richard F Celeste
Governor

July 26, 1988

Re: TRW INC., GLOBE MOTORS
HAZARDOUS WASTE MANAGEMENT
OHD 041 066 325
MONTGOMERY COUNTY
GENERATOR

Mr. Ike Beediwala
Plant Engineer
TRW Inc.
1784 Stanley Ave.
Dayton, Ohio 45404

Dear Mr. Beediwala:

Thank you for your submittal of July 20 to correct violations cited in an inspection letter dated June 24. The documents were received in this office on July 22.

Violations pertaining to container aisle space, wastes stored beyond 90 days, and weekly inspection log have now been corrected. The question on your company's plating operation has also been clarified and answered.

According to analytical data on the wastewater discharged from the plating operation, it appears that your company is not discharging any hazardous waste/hazardous constituents to the sewer or storm systems that does not meet effluent discharge limits. Your company is operating under a NPDES permit.

Your facility is now considered to be in satisfactory compliance with applicable State and Federal Hazardous Waste Rules and Regulations.

Sincerely,

Chul Kim-McGuire

Chul Kim-McGuire
Division of Solid & Hazardous Waste Management

cc: Dave Sholtis, CO, DSHWM

OhioEPA
State of Ohio Environmental Protection Agency
P O. Box 1049, 1800 WaterMark Dr
Columbus, Ohio 43266-0149

Toward A Cleaner Environment
15 Year Anniversary
1972 - 1987

RECEIVED

CERTIFIED MAIL

Richard F Celeste
Governor

Mr. Ike Beediwala
Plant Engineer
TRW, Inc.
1784 Stanley Avenue
Dayton, Ohio 45404

Dear Mr. Beediwala:

It has been brought to my attention by staff of the Ohio EPA Southwest District Office that TRW, Inc. was cited by letter dated June 24. 1988. for violations of Ohio's hazardous waste laws, specifically, rules 3745-65-35, 3745-66-74, and 3745-52-34. After consulting with me in order to initiate an enforcement action against TRW, Inc. for the cited violations, SWDO personnel were able to later report to me that your facility had "returned to compliance." On August 5, 1988, the District staff again confirmed your present compliance and I can in turn report to you that no enforcement action is contemplated at this time.

I am writing to you to express my concern that the file compiled in anticipation of enforcement action shows that TRW, Inc. has over a period of time several times violated rule 3745-52-34 of the Administrative Code concerning storage of hazardous wastes in excess of 90 days. TRW, Inc. is not licensed for hazardous waste storage at the Dayton, Ohio facility. A thorough weekly inspection of containers is warranted, with appropriate notation of accumulation starting dates.

The hazardous waste management regulatory program is not a new program, especially that part of hazardous waste rules applicable to generators. As a generator of hazardous waste which has been the subject of several Ohio EPA inspections, TRW, Inc. should understand and comply with these rules. If subsequent inspection by Ohio EPA discloses violations, the Agency will again consider an enforcement action, including payment of a penalty.

Very truly yours,

Jennifer Tiell
Assistant Legal Advisor

cc: Michael Savage, DSHWM
Dave Sholtis, DSHWM
Don Marshall/Jeff Hines/Chul Kim-McGuire, SWDO

ATTACHMENT 9

RCRA INTERIM STATUS INSPECTION FORM

PART 1. GENERAL INFORMATION

U.S. EPA I.D. NO. OHD 004472940

Facility: Gem City Chemicals Address: 1287 Air City Ave City: Dayton

State: Ohio Zip Code: 45404 County: Montgomery Telephone: 513-224-0711

Facility Operator: David Stuart Title: Plant Mgr. Telephone: 513-224-0711

Facility Owner: Howard C Weber Address: 1287 Air City Ave

City: Dayton State: Ohio Zip Code: 45404 Telephone: 513-224-0711

Type of Ownership: ✓ Private _____ Government State HWFAB No. —

Date of Inspection: 22 April 82 Time of Inspection: (Start) 8:40 Am (Finish) 9:30

Advance Notification? ___ No ✓ Yes: Telephoned about 15 minutes prior

Weather Conditions: a little chilly but a beautiful day

INSPECTION PARTICIPANT(S)

	(Name)	(Title)	(Telephone)
1.	David Stewart	Plant Mgr	513-224-0711
2.			
3.			
4.			

PART 3. TRANSPORTER REQUIREMENTS

	Yes	No	N/A	Remark #
1. The transporter has not transported any hazardous wastes without having first received a U.S. EPA Identification Number and registering with the Public Utilities Commission of Ohio. (263.11 and 3745-53-11).	✓			
2. The transporter has not accepted any hazardous wastes for transport unless the waste was accompanied by a manifest prepared by the generator in accordance with Sections 262 and 3745-52.	✓			
3. The transporter has signed the manifest as required by Section 263.20(b) and 3745-53-20-B and has carried the manifest with the waste shipment as required by 263.20(c) and 3745-53-20-C.	✓			
4. Upon delivery of the hazardous waste to the next transporter or the designated facility, the transporter has signed the manifest as required in Section 263.20 (d) and 3745-53-20-D and has retained a signed copy (available for inspection) for at least 3 years (263.22(a) and 3745-53-22-A).	✓			
5. The transporter has delivered the entire quantity of hazardous waste accepted from the generator in accordance with manifest instructions; in cases where this was not possible the transporter has contacted the generator for further instructions and revised the manifest accordingly (263.21 and 3745-53-21).	✓			
6. If hazardous waste has been delivered to rail transporters or water transporters, the original transporter has complied with the manifest handling requirements of Sections 263.20(e)(f) and 3745-53-20-E-F.			✓	
7. If hazardous waste has been shipped out of the country, the transporter has retained signed copies of the manifest (available for inspection for at least 3 years) indicating that the waste left the U.S.A. (263.22(c) and 3745-53-22-C).			✓	
8. Has the transporter ever had a discharge of hazardous waste during time that the waste was under his control?		✓		
a) Was immediate action taken? (Notify authorities, dike discharge) (263.30 (a) and 3745-53-30-A).			✓	

	Yes	No	N/A	Remark #
b) Were all of the notifications required by Sections 263.30(c)(d) and 3745-53-30-C-D made?			✓	
c) Was the discharge cleaned up as required by Sections 263.31 and 3745-53-31?			✓	
9. Does the transporter store hazardous wastes temporarily while they are in transit?	✓			
a) Manifested wastes are not stored for longer than 10 days ("Transfer Facility") and remain properly DOT-packaged during storage. (263.12 and 3745-53-12)	✓			

NOTE: TEMPORARY STORAGE IN STATIONARY TANKS IS NOT PERMITTED UNDER TRANSFER FACILITY REQUIREMENTS AND SUCH STORAGE REQUIRES A RCRA PERMIT APPLICATION AND IS SUBJECT TO INTERIM STATUS REQUIREMENTS FOR STORAGE FACILITIES. ANY TYPE OF STORAGE BY THE TRANSPORTER WHICH IS NOT SPECIFICALLY AUTHORIZED UNDER SECTION 263.12, TRANSFER FACILITY REQUIREMENTS, IS SUBJECT TO FULL RCRA REGULATION.

10. Does the transporter import hazardous waste into the United States?		✓		
11. Does the transporter mix hazardous wastes of different U.S. DOT shipping descriptions by placing them into a single container?			✓	

NOTE: A TRANSPORTER THAT IMPORTS HAZARDOUS WASTES OR MIXES WASTES AS DEFINED IN SECTIONS 263.10(c) AND 3745-53-10-C BECOMES A GENERATOR AND IS SUBJECT TO THE REQUIREMENTS OF SECTIONS 262 AND 3745-52.

REMARKS, PART 3. TRANSPORTER REQUIREMENTS

8/9/86 corrected 4WDMS for name of installation, contact plus mailing address, ownership, state codes, + added (305

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved OMB No 2050-0028 Expires 9-30-88
GSA No 0246-EPA-OT

United States Environmental Protection Agency
Washington, DC 20460

EPA Notification of Hazardous Waste Activity

Please refer to the *Instructions for Filing Notification* before completing this form. The information requested here is required by law (Section 3010 of the Resource Conservation and Recovery Act).

For Official Use Only

Comments

C C

Installation's EPA ID Number	Approved	Date Received (yr. mo. day)
C F OHD004472940 I/A C 1	A	81 11 22

I. Name of Installation

C 3: GEM CITY CHEMICALS, INC.

II. Installation Mailing Address

Street or P.O. Box

C 3: 1287 AIR CITY AVE., P.O. 251

City or Town	State	ZIP Code
C 4: DAYTON,	OH	45404

III. Location of Installation

Street or Route Number

C 5: 1287 AIR CITY AVE

City or Town	State	ZIP Code
C 6: DAYTON	OH	45404

IV. Installation Contact

Name and Title (last, first, and job title)	Phone Number (area code and number)
C 2: STEWART, DAVID, MGR.	513 224 0711

V. Ownership

A. Name of Installation's Legal Owner	B. Type of Ownership (enter code)
C R: H.C. WEBER & CHESSIE R.R.	P

VI. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. Refer to instructions.)

A. Hazardous Waste Activity

- [X] 1a. Generator — [X] 1b. Less than 1,000 kg/mo. SMALL QUANTITY GENERATOR Code 2
- [X] 2. Transporter
- [ ] 3. Treater/Storer/Disposer
- [ ] 4. Underground Injection
- [ ] 5. Market or Burn Hazardous Waste Fuel (enter 'X' and mark appropriate boxes below)
  - [ ] a. Generator Marketing to Burner
  - [ ] b. Other Marketer
  - [ ] c. Burner

B. Used Oil Fuel Activities

- [ ] 6. Off-Specification Used Oil Fuel (enter 'X' and mark appropriate boxes below)
  - [ ] a. Generator Marketing to Burner
  - [ ] b. Other Marketer
  - [ ] c. Burner
- [ ] 7. Specification Used Oil Fuel Marketer or Burner Who First Claims the Oil Meets the Specification

RECEIVED MAY 05 1986 SWD - MID EPA REGION V

VII. Waste Fuel Burning: Type of Combustion Device (enter 'X' in all appropriate boxes to indicate type of combustion device(s) in which hazardous waste fuel or off-specification used oil fuel is burned. See instructions for definitions of combustion devices.)

[ ] A. Utility Boiler [ ] B. Industrial Boiler [ ] C. Industrial Furnace

VIII. Mode of Transportation (transporters only — enter 'X' in the appropriate box(es))

[ ] A. Air [ ] B. Rail [X] C. Highway [ ] D. Water [ ] E. Other (specify)

IX. First or Subsequent Notification

Mark 'X' in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA ID Number in the space provided below.

[X] A. First Notification [ ] B. Subsequent Notification (complete item C)

C. Installation's EPA ID Number

ID — For Official Use Only														
C													T/A	C
W														1

X. Description of Hazardous Wastes *(continued from front)*

A. Hazardous Wastes from Nonspecific Sources. Enter the four-digit number from 40 *CFR* Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F 0 0 1	F 0 0 2	F 0 0 3	F 0 0 5		
7	**8**	**9**	**10**	**11**	**12**

B. Hazardous Wastes from Specific Sources. Enter the four-digit number from 40 *CFR* Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. Commercial Chemical Product Hazardous Wastes. Enter the four-digit number from 40 *CFR* Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
U 0 0 2	U 1 4 0	U 1 5 4	U 0 8 0	U 1 5 9	U 1 6 1
37	**38**	**39**	**40**	**41**	**42**
U 2 1 0	U 2 2 0	U 2 2 6	U 2 2 8	U 2 3 9	
43	**44**	**45**	**46**	**47**	**48**

D. Listed Infectious Wastes. Enter the four-digit number from 40 *CFR* Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. Characteristics of Nonlisted Hazardous Wastes. Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 — 261.24)*

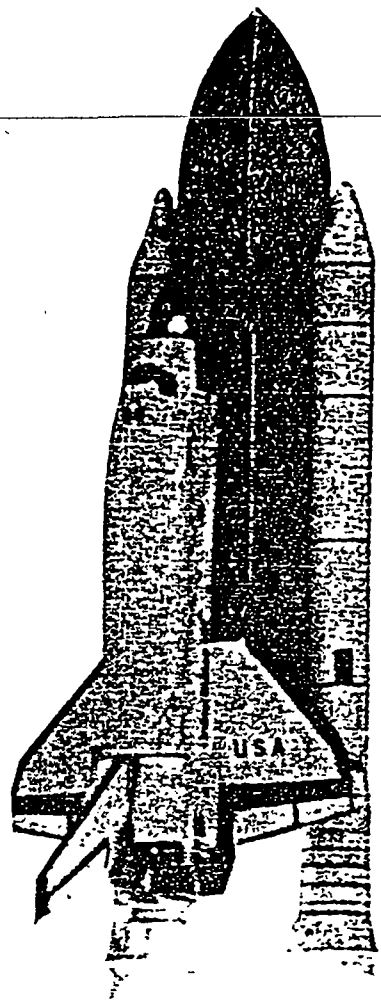
☒ 1. Ignitable *(D001)* ☒ 2. Corrosive *(D002)* ☐ 3. Reactive *(D003)* ☐ 4. Toxic *(D000)*

XI. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature	Name and Official Title *(type or print)*	Date Signed
David A. Stewart	David A. Stewart, Vice President	5-2-86

PRODUCT GUIDE



Over 25 years of reliable service

Gem City Chemicals, Inc.
1287 AIR CITY AVE. P.O. BOX 251
DAYTON, OHIO 45404
513/224-0711

		FORM	CODE DOT CLASS	EPA NO.
A	Acetic Acid	LIQ	COR	UN2789
	Acetone	LIQ	FL	UN1090
	Acid Inhibitors	—	—	—
	ADI Supplement	—	—	—
	Anti-Detonate Injection Mixture			
	Algaecide	—	—	—
	"Gemclear-100"			
	Alum	SOL	ORM-E	NA9087
	Aluminum Sulfate			
	Aluminum Sulfate	SOL	ORM-E	NA9087
	Alum			
	Ammonnia-Anhydrous	CG	NFG	UN1005
	Ammonium Alum	—	—	—
	Ammonium Bicarbonate	SOL	ORM-E	NA9081
	Ammonium Bichromate			
	Ammonium Chloride	SOL	ORM-E	NA9085
	Sal Ammoniac			
	Ammonium Hydroxide	LIQ	COR	NA2672
	Aqua Ammonia			
	Ammonium Nitrate	SOL	OX	UN2068
	Ammonium Persulfate	—	—	—
	Ammonium Sulfate	—	—	—
	Amyl Acetate	LIQ	FL	UN1104
	Banana Oil			
	Anhydrous Ammonia	GAS	NFG	UN1005
	Anti-Freeze	LIQ	—	—
	Aqua Ammonia	LIQ	COR	NA2672
	Ammonia Hydroxide			
	"Aqua-Floc"	SOL	ORM-E	NA9087
	Filter-Aid			
	Aromatic Solvent #150			
B	Banana Oil	LIQ	FL	UN1104
	Amyl Acetate			
	Barium Carbonate	SOL	PCS	—
	Battery Acids	LIQ	COR	NA2796
	Bicarbonate of Soda	SOL	—	—
	Bleach (Gemchlor)	LIQ	COR	UN1791
	Sodium Hypochlorite			
	Blue Vitriol	SOL	—	—
	Copper Sulfate			
	Borax	SOL	—	—
	Sodium Borate			
	Boric Acid	SOL	—	—
	Brimestone	SOL	ORM-C	UN1350
	Sulfur Cruce			
	Bromine Sticks	SOL	COR	UN1744
	Butanol	LIQ	FL	NA1120
	Butyl Alcohol			
	Butyl Acetate	LIQ	FL	UN1123
	Butyl Alcohol	LIQ	FL	NA1120
	Butanol			
	Butyl "Carbitol"	LIQ	—	—
	Glycol Ether-DB			
	Butyl "Cellosolve"	LIQ	—	—
	Glycol Ether-EB			
C	Calcium Carbonate	SOL	—	—
	Whiting			
	Calcium Chlorice	SOL	—	—
	Flake & Pellets			
	Calcium Chlorice Liquid	LIQ	COR	—
	Calbond —Dust Control			
	Calcote —Wetting Salt			
	Calset —Concrete			
	Calcium Hypochlorite 65%	SOL	OX	UN1748
	Carbitol Solvent	LIQ	—	—
	Glycol Ether-DE			

		FORM	CODE DOT CLASS	EPA NO.
	Caustic Potash (Flk. & Liq.)	SOL	COR	UN1813
	Potassium Hydroxide			
	Caustic Soda	LIQ	COR	UN1824
	50% Liquid			
	Flk. & Pels	SOL	COR	UN1823
	Sodium Hydroxide			
	CD-40 Solvent	LIQ	—	—
	Engraving Plate Solvent			
	"Cellosolve"	LIQ	—	—
	Glycol Ether-EE			
	Chlorine—Liquified Gas	CG	NFG	UN1017
	Chromic Acid	SOL	OX	NA1463
	Citric Acid	SOL	—	—
	Copper Cyanide	SOL	X-B	UN1587
	Copper Sulfate	SOL	—	—
	Blue Vitriol			
	Copperas	SOL	ORM-E	NA9125
	Ferrous Sulfate			
	Cronar Developer	LIQ	—	—
D	"Daysol"	LIQ	FL	UN1170
	Denatured Ethyl Alcohol			
	De-Ionized Water	LIQ	—	—
	Descaler Compounds			
	Diacetone Alcohol	LIQ	FL	UN1148
	Diammonium Phosphate	SOL	—	—
	"Dicalite"	SOL	—	—
	Diatomaceous Earth			
	Diethanolamine	LIQ	FL	UN1154
	Diethylene Glycol	LIQ	—	—
	Disodium Phosphate	SOL	—	—
	"Du-Chlor"	SOL	OX	UN2465
	Sodium Dichlorocyanurate			
	"E-Z Chlor"	SOL	OX	UN2465
	Sodium Dichlorocyanurate			
E	Ethyl Acetate	LIQ	FL	UN1173
	Ethylene Glycol	LIQ	—	—
F	Ferric Chlorice	LIQ	COR	UN2582
	Iron Chlorice			
	"Ferri-Floc"	SOL	ORM-E	NA9121
	Ferric Sulfate			
	Ferric Sulfate	SOL	ORM-E	NA9121
	Iron Sulfate			
	Ferrous Sulfate	SOL	ORM-E	NA9125
	Copperas, Iron Sulfate, Iron Sugar			
	Filter-Aids	SOL	—	—
	Alum			
	"Aqua-Floc"			
	"Dicalite"			
	Floor Absorbent	SOL	—	—
	"Dry Spot"			
	Fluoboric Acid	LIQ	COR	UN1775
	Formaldehyde-37%	LIQ	ORM-A	UN1198
	Formic Acid	LIQ	COR	UN1779
	Gembrite #212 & "#222"	LIQ	COR	UN1805
	Scale Removers			
G	"Gembrite #442"	LIQ	COR	UN1463
	"Gemchlor" 12.5%	LIQ	COR	UN1791
	Sodium Hypochlorite			
	"Gemclear-100"	—	—	—
	"Gemphos #100"	SOL	—	—
	Sequestering Agent			
	Gemsolve	LIQ	FL	—
	Special Industrial Solvents			
	Gemsets	LIQ	—	—
	Gluconic Acid	LIQ	—	—
	Glycerine	LIQ	—	—

CELANESE CHEMICAL COMPANY

DOW

Diamond Shamrock

		FORM	CODE DOT CLASS	EPA NO.
	Glycol Ether-DB	LIQ	—	—
	Glycol Ether-DE	LIQ	—	—
	Glycol Ether-DM	LIQ	—	—
	Glycol Ether-EB	LIQ	CL	UN2369
	Glycol Ether-EE	LIQ	CL	UN1172
	Glycol Ether-EE Acetate	LIQ	CL	UN1172
	Glycol Ether-EM	LIQ	CL	UN1188
	Goggle Cleaner	LIQ	—	—
	"Graficol"	LIQ	FL	UN1170
H	Heavy Duty Cleaner	SOL	COR	UN1719
	Heptane	LIQ	FL	UN1206
	Hexalene Glycol	LIQ	—	—
	Hexane	LIQ	FL	UN1208
	High Flash-140	LIQ	CL	UN1255
	"HTH"	SOL	OX	UN1748
	Calcium Hypochlorite—65%			
	Hydrochloric Acid	LIQ	COR	UN1789
	Muriatic Acid			
	Hydrofluoric Acid	LIQ	COR	UN1786
	Hydrofluosilicic Acid—23%	LIQ	COR	NA1778
	Hydrogen Peroxide			
	Hydroxyacetic Acid 70%	LIQ	COR	NA1760
	"Hypo Rice"	SOL	—	—
	Sodium Hyposulfite			
I	Ice Melter	SOL	—	—
	Ice Pals	SOL	—	—
	Isobutyl Alcohol	LIQ	FL	UN1987
	Isopropyl Acetate	LIQ	FL	UN1220
	Isopropyl Alcohol	LIQ	FL	UN1219
	Iron Chloride	LIQ	COR	UN2582
	Ferric Chloride			
	Iron Sulfate Sugar	SOL	ORM-E	NA9125
	Copperas, ferrous sulfate			
	Iron Sulfate	SOL	ORM-E	NA9121
	"Fern-Floc"			
KL	Kerosene	LIQ	CL	UN1223
	"Kwik-Dri"	LIQ	CL	UN1255
	Stoddard Solvent Fast Dry			
	Lacquer Thinners	LIQ	FL	UN1142
	Lead Fluoborate	LIQ	ORM-B	NA2291
	Lime (Hydrated)	SOL	—	—
	Lye	SOL	COR	UN1824
	Caustic Soda			
M	"M-Clene D"	LIQ	ORM-A	UN1593
	Methylene Chloride			
	Mercury (Metal)	LIQ	ORM-B	NA2809
	"Meter Scale Remover"	LIQ	COR	UN1789
	Methanol	LIQ	FL	UN1230
	Methyl Alcohol			
	Methyl Alcohol	LIQ	FL	UN1230
	Methanol			
	Methyl "Carbitol"	LIQ	—	—
	Glycol Ether-DM			
	Methyl "Cellosolve"	LIQ	CL	UN1188
	Glycol Ether-EM			
	Methyl Ethyl Ketone	LIQ	FL	UN1193
	Methyl Isobutyl Ketone	LIQ	FL	UN1245
	Methylene Chloride	LIQ	ORM-A	UN1593
	Mineral Oil	LIQ	—	—
	Mineral Spirits	LIQ	CL	UN1255
	Stoddard Solvent			
	Stoddard Solvent R-56			
	Monoammonium Phosphate	SOL	—	—
	Monethanolamine	LIQ	COR	UN2491
	Monosodium Phosphate	SOL	—	—
	Muriatic Acid	LIQ	COR	UN1789

		FORM	CODE DOT CLASS	EPA NO.
	Hydrochloric Acid			
N	Naphtha VM&P	LIQ	FL	UN1256
	Nickel Acetate	SOL	—	—
	Nickel Carbonate (Basic)	SOL	—	—
	Nickel Chloride (Cry. & Liq.)			
	Nickel Salts (Single)	SOL	ORM-E	NA9141
	Nickel Sulfate			
	Nickel Sulfate (Cry. & Liq.)	SOL	ORM-E	NA9141
	Niter Cake	SOL	COR	UN2837
	Sodium Bisulfate			
	Nitric Acid	LIQ	OX	UN2031
O	Odorless Solvent	LIQ	CL	—
	Ortho-Tolidine	LIQ	—	—
	Test Reagent			
	Oxalic Acid	SOL	—	—
P	Perchlorethylene	LIQ	—	—
	"Perclene-D"			
	"Perclene-D"	LIQ	—	—
	Perchlorethylene			
	pH Adjusters:			
	Muriatic Acid	LIQ	COR	UN1789
	Soda Ash	SOL	—	—
	"Splash"	SOL	—	—
	"Sub-Do"	SOL	COR	UN2837
	Phosphonic Acid 75%	LIQ	COR	UN1805
	Phosphonic Acid 85%	LIQ	COR	UN1805
	Pool Chemicals	—	—	—
	See Special List			
	Pool Cleaners			
	"Pool-Sheen"	SOL	COR	—
	"Release"	LIQ	COR	UN1719
	"Stainex"	SOL	—	—
	"Pool-Sheen"	SOL	COR	—
	Paint & Filter Cleaner			
	"Pool-Sheen Paste"	SOL	—	—
	Scouring Paste			
	Potassium Bichromate	SOL	ORM-A	NA1479
	Potassium Carbonate	SOL	—	—
	Potassium Chloride	SOL	—	—
	Potassium Chromate	SOL	ORM-E	NA9142
	Potassium Cyanide	SOL	X-B	UN1680
	Potassium Ferrocyanide	SOL	—	—
	Potassium Hydroxide	SOL	COR	UN1813
	Caustic Potash			
	Potassium Nitrate	SOL	OX	UN1486
	"Saltpetre"			
	Potassium Nitrite	SOL	OX	UN1488
	Potassium Permanganate	SOL	OX	UN1490
	Potassium Sorbate	SOL	—	—
	Potassium Tripolyphosphate	SOL	—	—
	Propyl Alcohol	LIQ	FS	UN1274
	Propylene Glycol	LIQ	CL	—
	"Pursan" Calcium Hypochrite (Dry)	SOL	OX	UN1748
	Pumice	SOL	—	—
R	Reagent Chemicals	LIQ	—	—
	"Release"	LIQ	COR	UN1719
	Liquid General Cleaner			
	Rubber Solvent—White Gasoline	LIQ	FL	UN1203
	"Rust-X"	LIQ	COR	UN1755
	Rust Remover			
S	Salt	SOL	COR	—
	Water Softening			
	Salt Cake	SOL	—	—
	Sodium Sulfate			
	Sanitizers			
	Chlorine	LG	NFG	UN1017

nical
JED Company

FMC.

Vulcan Materials Company

VIRGINIA CHEMICALS

	FORM	CODE DOT CLASS	CODE EPA NO.
e Sticks"	SOL	COR	UN1744
lor"	SOL	OX	UN2465
lor"	LIQ	COR	UN1791
	SOL	OX	UN1748
st"	SOL	—	—
questering Agent			
ng Agents:			
os #100"	SOL	—	—
uest"	SOL	—	—
(Light & Dense)	SOL	—	—
Carbonate			
etate (Pwd & Liq.)	—	—	—
id Fluoride	SOL	COR	UN2439
Bifluoride			
nzoate (Flk. & Liq.)	—	—	—
carbonate	SOL	—	—
ate of Soda			
chromate	SOL	ORM-E	NA9146
sulfate	SOL	COR	UN2836
ke			
sulfite	SOL	COR	NA2693
Metabisulfite			
rate	SOL	—	—
rbonate	SOL	—	—
h			
romate	SOL	ORN-E	NA9145
rate	SOL	—	—
anide	SOL	X-B	UN1689
brik—Cyanogran"			
uoride (Cry & Pwd.)	SOL	ORM-B	UN1690
uconate	LIQ	—	—
xametaphosphate	SOL	—	—
drosulfite	SOL	FS	UN2318
-T			
droxide	SOL	COR	UN1823
Soda			
pochlorite	LIQ	COR	UN1791
lor"			
posulfite	SOL	—	—
Thiosulfate, Hypo			
etabisulfite	SOL	COR	NA2693
Bisulfite			
etasilicate	SOL	—	—
trate	SOL	OX	UN1498
trite	SOL	OX	UN1500
rborate	SOL	—	—
icate	LIQ	—	—
lass			
lfate	SOL	—	—
e			
lfite	SOL	—	—
te			
traborate	SOL	—	—
iosulfate	SOL	—	—
Hyposulfite			
polyphosphate			
Reg)	SOL	—	—
	LIQ	—	—
	SOL	—	—
ral			
	SOL	—	—
onne Stabilizer			
	SOL	—	—
mover			

	FORM	CODE DOT CLASS	CODE EPA NO.
Stannous Fluoborate	SOL	—	—
Stoddard Solvent	LIQ	CL	UN1255
Mineral Spirits			
Stoddard Solvent Fast Dry	LIQ	CL	UN1255
Kwik-Dri			
Stoddard Solvent R-66	LIQ	CL	UN1255
Mineral Spirits			
"Sub-Do"	SOL	COR	UN2836
pH Control			
Sulfamic Acid	SOL	—	—
Sulfur Commercial Flour	SOL	ORM-C	UN1350
Sulfuric Acid	LIQ	COR	UN1833
Surfactants (Gemwet)	LIQ	—	—
T Talc	SOL	—	—
Test Reagents	LIQ	—	—
Tetrachlorethylene	LIQ	—	—
Perchlorethylene			
Tetrapotassium Pyrophosphate (Pwd. & Liq)(TKPP)	SOL	—	—
Tetrasodium Pyrophosphate	SOL	—	—
Toluol	LIQ	FL	UN1294
Toluene			
Trichlorethylene (TRI)	LIQ	ORM-A	UN1710
"Triclene-D"			
1,1,1 Trichlorethane	LIQ	ORM-A	UN2831
"Triclene D"	LIQ	ORM-A	UN1710
Trichlorethylene			
Triethanolamine	LIQ	—	—
Triethylene Glycol	LIQ	—	—
Trisodium Phosphate (TSP)	SOL	COR	UN1719
Trisodium Phosphate Chlorinated	SOL	COR	UN1719
UW Urea	SOL	—	—
Water Glass	LIQ	—	—
Sodium Silicate			
Wetting Agents (Gemwets)	LIQ	—	—
White Gasoline	LIQ	FL	UN1203
Rubber Solvent			
"Wilt"	LIQ	CL	—
Vegetation Killer			
Windshield Wiper Fluid	LIQ	—	—
Windshield—Anti-Freeze	LIQ	—	—
XZ Xylol	LIQ	FL	UN1307
Xylene			
Zinc Cyanide	SOL	X-B	UN1713
Zinc Sulfate	SOL	ORM-E	NA9161

EQUIPMENT

Liquid Metronics Chemical feed pumps
Taylor Test Kits & Chemicals.

TENNESSEE CHEMICAL COMPANY

WRIGHT & DWIGHT CHEMICAL CO. INC.

MILES
Citro-tech Products

USS CHEMICAL DIVISION

10

VIRGINIA Chemicals

Mallinckrodt
NE CHEMICALS

EXXON COMPANY, U. S. A.

M&T CHEMICALS INC.

BLACK RIVER LIME COMPANY

CODES

FORMS:

Liquid ..... LIQ
Solid ..... SOL
Compress gas ..... CG

DOT CODES:

Combustible liquid CL
Corrosive ..... COR
Flammable liquid ..... FL

DOT CODES:

Flammable solid ..... FS
Non-flammable gas ..... NFG
Oxidizer ..... OX
Other regulated material ..... ORM
A through E
Poison X
A and B
Not hazardous ..... —

FLASH POINTS AND SOLVENT TOXICITY RATINGS

(Threshold Limit Values)

NOTE: The Threshold Limit Values are a measure of the maximum allowable concentrations of the vapors of any given volatile material, calibrated in PPM by volume, that a human being can safely tolerate during an eight hour period.

	F° FLASH PT.	TOXICITY
Acetic Acid	112	10
Acetone	15	1000
Anhydrous Ammonia	None	50
Butyl Acetate	99	150
Butyl Alcohol	97	100
Carbon Tetrachloride	None	10
CD-40 Solvent	53	200
Cellosolve Acetate	134	100
Chlorine	None	1
Daysol	48	200
Diacetone Alcohol	142	50
Ethyl Acetate 99%	24	400
Ethyl Alcohol	48	200
Ethylene Dichloride	70	50
Ethylene Glycol	232	100
Formaldehyde	156	3
Formic Acid	142	5
Gemsolv #90	140	350
Gemsolv #466	180	400
Glycol Ether—EB	157	50
Glycol Ether—EE	120	200
Glycol Ether—EM	107	25
Graficol	48	200
Heptane	20	500
Hexane	0	100
High Flash-140	141	—
Hydrochloric Acid	None	5

	F° FLASH PT.	TOXICITY
Hydrofluoric Acid 70%	None	3
Isobutyl Alcohol	95	100
Isopropyl Acetate	60	250
Isopropyl Alcohol	53	400
Kwik-Dri	100	100
Lacquer Thinner #500	27	200
Lacquer Thinner #700	5	150
Methyl Alcohol	54	200
Methyl Ethyl Ketone	22	200
Methyl Isobutyl Ketone	74	100
Methylene Chloride	None	200
Muriatic Acid	None	5
Naphtha VM&P	40	200
Nitric Acid	None	2
Odorless Solvent	126	200
Perchlorethylene	None	100
Propyl Alcohol	71	200
Rubber Solvent	−25	217
Solvent 140°	140	25
Stoddard Solvent	105	200
Stoddard Solvent Fast Dry	100	100
Stoline	−25	217
Toluol	41	100
1.1.1 Trichlorethane	None	350
Trichlorethylene	None	100
Xylol	80	100

FREEZING TEMPERATURES

There are, in the product list, a small number of liquid chemicals having high temperature freezing characteristics. Chemicals with this characteristic require special storage consideration during the winter months of the year.

This group is listed as follows:

PRODUCT	FREEZING TEMPERATURE
Acetic Acid	61°F
Caustic Soda (Sodium hydroxide) liquid 50%	54°F
Formaldehyde—37%	55° to 85°F
Formic Acid	28°F
Hydroxyacetic Acid—70%	50°F
Monethanolamine	41°F
Sodium Silicate	32°F
Triethanolamine	64°F

Gem City Chemicals, Inc.

1287 AIR CITY AVE P O BOX 251
DAYTON, OHIO 45404
TEL 513/224-0711
FAX 513/222-6391

January 13, 1995

Ohio EPA
Div. Water Pollution Control
Enforcement Section, ES. Mor
P.O. Box 1049
Columbus, OH 43266-0149

Gentlemen:

Please note the effluent test results (sample taken 12-5-94) for Trichlorethylene (page 2) is reported at 29 UG/L. Our permit level for this item is 26 UG/L. Results from samples taken early this month indicate the level is increasing.

On 1-10-95 I received the December, 1994 test results. On 1-11-95 I reported the level to Greg Lauck, OEPA, DERR, Columbus and he assigned the report ID 9501-57-0107.

It appears the reductions in efficiency of our stripper tower is the result of fouled media. On 1-16-95 the system will be shut down for 8 to 72 hours in order to acid clean the media. Additional testing will be conducted once the system is back in operation.

Mr. Joe Smindak, OEPA-DERR-SWDO, has been advised of the situation and concurs with our course of action.

Please let me know if additional information is needed.

Sincerely,

GEM CITY CHEMICALS, INC.

David A. Stewart

DAS:jm

Gem City Chemicals, Inc.

1287 AIR CITY AVE P O BOX 251
DAYTON, OHIO 45404
TEL 513/224-0711
FAX 513/222-6391

January 13, 1995

John Spitler
Ohio EPA-DERR-SWDO
40 S. Main St.
Dayton, OH 45402-2086

Re: Noncompliance Notification
OEPA ID 9501-57-0107

Dear Mr. Spitler:

On 1-10-95, while reviewing December, 1994 test results of effluent from our ground water stripper tower, I noticed the NPDES level for Trichlorethylene was at 29 UG/L. The limit allowed by permit is 26 UG/L. Preliminary results from tests conducted in early January 1995 also indicate the effluent for this component exceeds the limit.

On 1-11-95 I notified Mr. Greg Lauck, OEPA-DERR, Columbus of the matter and he assigned the above ID number. Mr. Joe Smindak, OEPA-DERR-SWDO was also advised of the situation and concurs with our plan of action.

Notification: As required by NPDES Permit OH0108987 (Sec.12,C)

1. Limitation exceeded: Trichlorethylene - as noted above.
2. Extent of exceedent: 3 UG/L.
3. Apparent cause: Fouled media in stripper tower
4. Period of exceedance: Began on or about 12-5-94 and continues through this date
5. Anticipated time expected to continue: Problem should be corrected by 1-18-95
6. Steps taken to reduce, eliminate...: System will be shut down on 1-16-95 in order to clean media with acid which will restore system removal efficiency.

Please let me know if you have any questions or comments.

Sincerely,
GEM CITY CHEMICALS, INC.

David A. Stewart

DAS:jm

OhioEPA INITIAL POLLUTION INCIDENT REPORT

SPILL I.D #9501-57-0107 DISTRICT SW

REPORTED BY	DAVID STEWART	REPORTED	01/11/95	9:34
TITLE	PRESIDENT	DISCOVERED	01/10/95	12:00
TELEPHONE	513-224-0711	OCCURRED	12/05/94	1200
AFFILIATION	COMPANY			

DID SPILLER REPORT? Y COMPLAINT? N PRIORITY 4

SUSPECTED SPILLER	GEM CITY CHEMICALS	
MAILING ADDRESS	PO BOX 251	
	DAYTON	OH 45404
TELEPHONE	513-224-0711	

COUNTY MONTGOMERY TOWNSHIP DAYTON

LOCATION 1287 AIR CITY AV.

SOURCE Waste system CAUSE Discharge/Bypass

REASON Unknown reasons

LATITUDE LONGITUDE WATERWAY AFFECTED MAD RIVER

MEDIA AFFECTED Post-88 surface water

DID YOU TELL THE SPILLER TO CALL THE N.R.C.? N LOCAL EPC? N BUSINESS N SARA REPORT N

RECEIVED BY Lauck, Greg

REMARKS

NPDES FOR TCE, LIMIT IS 26 MU/L, READING 28MU/L, 30 DAY AVERAGE. OUTFALL NUMBER 1IN00134001.

PRODUCT SPILLED

PRODUCT	AMOUNT	UOM	REPORTABLE QTY	SIZE	TYPE	EHS
WASTE WATER		UNK		U	WW	

OTHER AGENCIES NOTIFIED

NAME	DATE	TIME	PERSON
DWPC			M BURT

Sp2b

Gem City Chemicals, Inc.

1287 AIR CITY AVE P O BOX 251
DAYTON, OHIO 45404
TEL 513/224-0711
FAX 513/222-6391

Mr. John Spitler
OEPA DERR SWDO
40 South Main St.
Dayton, OH 45402-2086

1-31-95

Re: Noncompliance Notification ID No 9501-57-0107

Dear Mr. Spitler,

Enclosed please find a copy of the most recent test results from our groundwater recovery stripper system showing we are back in compliance with our NPDES. As you can see the removal efficiency has improved significantly and the effluent level is well within permit limits.

If you have any questions or need additional information prior to the next scheduled quarterly report please let me know.

Sincerely,

David A. Stewart

Gem City Chemicals, Inc.

1287 AIR CITY AVE. P O BOX 251
DAYTON, OHIO 45404
TEL. 513/224-0711
FAX. 513/222-6391

1-28-95

Ohio EPA
Division of Water Pollution Control
Enforcement Section
P.O. Box 1049
Columbus, OH 43266-0149

Re: Noncompliance ID No. 9501-57-0107

Gentlemen:

The problem with our groundwater/ stripper tower system, resulting in noncompliance with NPDES permit limits as reported in our letter of 1-13-95, has been corrected. Enclosed as reference is a copy of influent and effluent test results from 1-20-95, along with efficiency % showing we are now in compliance.

The cause of the problem was fouled media in the stripper tower. A thorough cleaning of the media has resulted in reduced effluent VOC levels and increased efficiency. In order to prevent future problems of this nature we will shut the system down for scheduled cleaning once per year.

Please let me know if you have any questions.

Sincerely,

David A. Stewart

Enc: 1

cc: ~~Joe Smindak~~ - OEPA-DERR-SWDO
John Spitler - OEPA-DERR-SWDO

A VOC analysis was also performed on the Jan 20, 1995 influent and effluent samples of the stripper tower. Only the following compounds were detected and the efficiency of their removal is also shown:

Parameter	Units	Influent	Effluent	Efficiency
n-Butylbenzene	µg/ℓ	<25	<1	%
sec-Butylbenzene	µg/ℓ	<25	<1	%
Chloroform	µg/ℓ	<13	<0.5	%
1,1-Dichloroethane	µg/ℓ	<25	<1 (22 limit)	%
1,2-Dichloroethane	µg/ℓ	<13	<0.5	%
1,1-Dichloroethene	µg/ℓ	<25	<1 (22 limit)	%
cis-1,2-Dichloroethene	µg/ℓ	47	1.6	97 %
trans-1,2-Dichloroethene	µg/ℓ	<25	<1 (25 limit)	%
Ethylbenzene	µg/ℓ	<25	<1	%
Isopropyl benzene	µg/ℓ	<25	<1	%
p-Isopropyltoluene	µg/ℓ	<25	<1	%
Tetrachloroethene	µg/ℓ	210	1.4 (52 limit)	99 %
Toluene	µg/ℓ	<25	<1	%
1,1,1-Trichloroethane	µg/ℓ	244	1.4 (22 limit)	99 %
1,1,2-Trichloroethane	µg/ℓ	<5.0	0.2	N/A
Trichloroethene	µg/ℓ	199	2.4 (26 limit)	99 %
1,2,4-Trimethylbenzene	µg/ℓ	<25	<1	%
1,3,5-Trimethylbenzene	µg/ℓ	<25	<1	%
Vinyl chloride	µg/ℓ	<25	<1	%
m,p-Xylene	µg/ℓ	<25	<1	%
o-Xylene	µg/ℓ	<25	<1	%
all other listed VOCs	µg/ℓ	bdl	bdl	%

GEM CITY CHEMICALS, INCORPORATED
DAYTON, OHIO

NPDES PERMIT RENEWAL
Permit #1IN00134

Prepared for:
Gem City Chemicals, Inc.
1287 Air City Drive
P.O. Box 251
Dayton, Ohio 45404

Prepared by:
HOK/K INDUSTRIAL, INC.
2490 Technical Drive, P.O. Box 3004
Miamisburg, OH 45343-3004

November, 1995

TABLE OF CONTENTS

SECTION	DESCRIPTION
1	Signed EPA Form 3510-1
2	Maps
3	Signed EPA Form 3510-2C
4	Flow Diagram
5	Proposed Changes to Permit Terms and Conditions

Please print or type in the unshaded areas only (fill-in areas are spaced for elite type, i.e. 12 char/inch)

Form Appr ... OMB No 2040 0086 Approval expires 5-31-[illegible]

FORM 1 GENERAL

EPA

ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the General Instructions before starting.)

I EPA ID NUMBER: F OH 0 1 0 8 9 8 7

LABEL ITEMS

I EPA I.D. NUMBER

III FACILITY NAME

V FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

1 1 0 0 1 3 4

OH0108987

GENERAL INSTRUCTIONS

If a preprinted label has been provided, af it in the designated space. Review the infor ation carefully, if any of it is incorrect, cr through it and enter the correct data in t appropriate fill-in area below. Also, if any the preprinted data is absent (*the area to t left of the label space lists the informatu that should appear*) please provide it in t proper fill-in area(s) below. If the label complete and correct, you need not compl Items I, III, V, and VI (*except VI-B wh must be completed regardless*). Complete items if no label has been provided. Refer the instructions for detailed item descri tions and for the legal authorizations unc which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS. Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK X: YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK X: YES	NO	FORM ATTACHED
A Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B Does or will this facility (*either existing or proposed*) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility (*other than those described in A or B above*) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: GEM CITY CHEMICALS, INCORPORATED

IV. FACILITY CONTACT

A NAME & TITLE (last first & title)	B PHONE (area code & no.)
2 STEWART DAVID PRESIDENT	513 224 0711

V. FACILITY MAILING ADDRESS

A STREET OR P.O. BOX	
3 1287 AIR CITY AVE PO BOX 251	

B CITY OR TOWN	C STATE	D ZIP CODE
4 DAYTON	OH	45404

VI. FACILITY LOCATION

A STREET ROUTE NO. OR OTHER SPECIFIC IDENTIFIER	
5 1287 AIR CITY AVENUE	

B COUNTY NAME
MONTGOMERY

C CITY OR TOWN	D STATE	E ZIP CODE	F COUNTY CODE (if known)
6 DAYTON	OH	45404	57

$100.00 11/29/95
14517 11/22/95

CONTINUED FROM THE FRONT

VII SIC CODES (4-digit in order of priority)

A FIRST	B SECOND
5161 (specify) Wholesale Trade: Chemicals & ~~Allied Products~~	(specify)
C THIRD	**D FOURTH**
(specify)	(specify)

VIII OPERATOR INFORMATION

A NAME	B Is the name listed in Item VIII-A also the owner?
GEM CITY CHEMICALS	X YES ☐ NO

C STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if Other, specify.)	D PHONE (area code & no.)
F = FEDERAL; S = STATE; P = PRIVATE; M = PUBLIC (other than federal or state); O = OTHER (specify)	P (specify) — A: 513 224 0711

E STREET OR P.O. BOX	F CITY OR TOWN	G STATE	H ZIP CODE
1287 AIR CITY AVE PO BOX 251	DAYTON	OH	45404

IX. INDIAN LAND

Is the facility located on Indian lands?

☐ YES X NO

X. EXISTING ENVIRONMENTAL PERMITS

A NPDES (Discharges to Surface Water)	D PSD (Air Emissions from Proposed Sources)
9N 1IN00134*AD	9P
B UIC (Underground Injection of Fluids)	**E OTHER (specify)**
9U	9 (specify)
C RCRA (Hazardous Wastes)	**E OTHER (specify)**
9R OHO000447294O	9 (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Chemical distribution, blending, and repackaging facility.

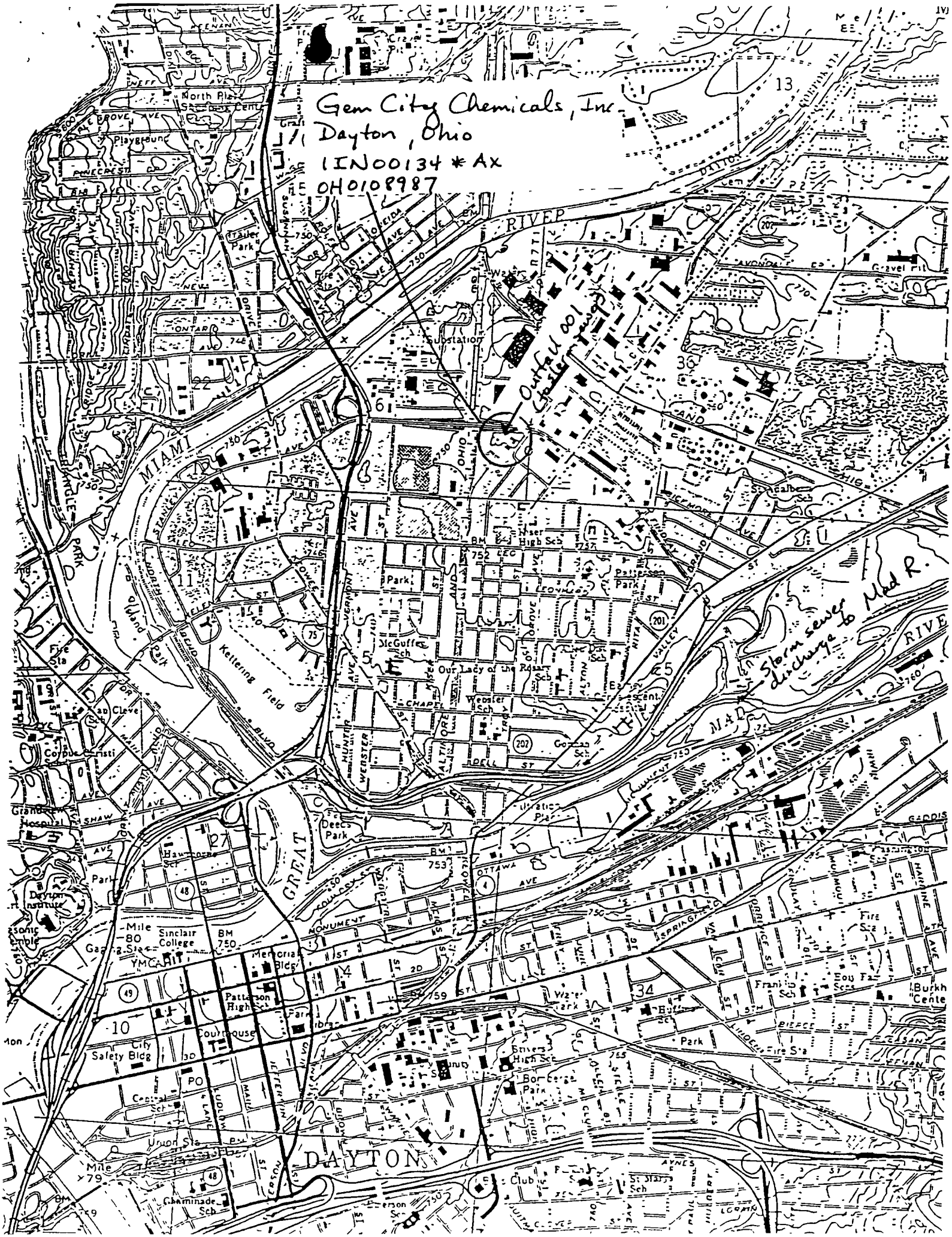
XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A NAME & OFFICIAL TITLE (type or print)	B SIGNATURE	C DATE SIGNED
DAVID STEWART, PRESIDENT		11/29/95

COMMENTS FOR OFFICIAL USE ONLY

C


Gem City Chemicals, Inc
Dayton, Ohio
IN00134 * Ax
OH0108987
Outfall 001
Storm sewer discharge to Mad R.
MIAMI
RIVER
MAD
GREAT
DAYTON
Kettering Field
Fire Sta
Substation
Gravel Pit
Trailer Park
Playground
Park
Deeds Park
Courthouse
City Safety Bldg
Memorial Bldg
Patterson High Sch
Stivers High Sch
Webster Sch
Our Lady of the Rosary Sch
McGuffey Sch
Sinclair College
YMCA
Union Sta
Mile 80
Mile 79
BM 750
BM 752
BM 753
BM 759

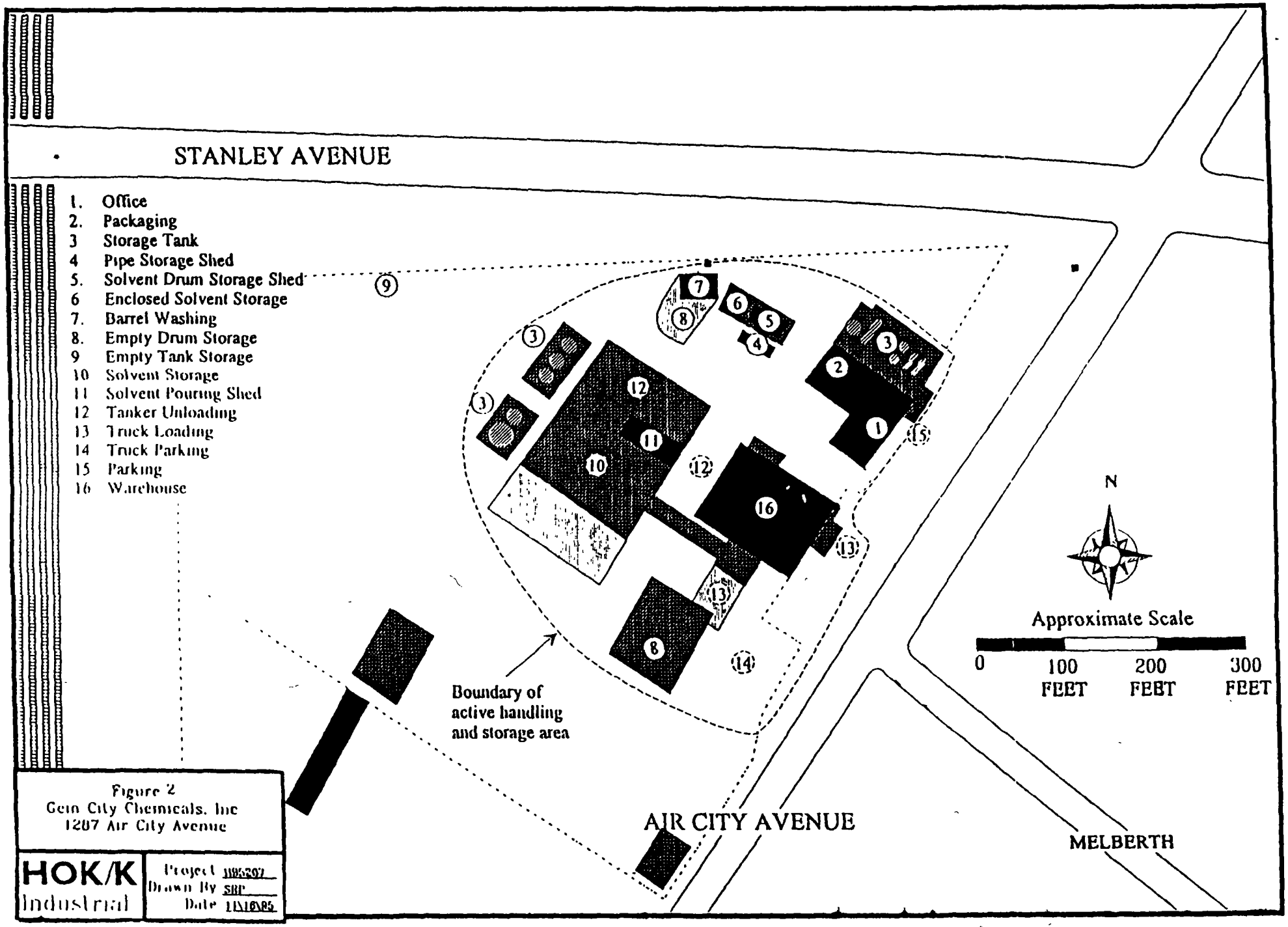


Figure 2
Gem City Chemicals, Inc
1287 Air City Avenue

HOK/K Industrial

Project 886207
Drawn By SBP
Date 10/16/85

Please print or type in the unshaded areas only

EPA I.D. NUMBER *(copy from Item 1 of Form 1)* OH 0108987

Form Approved
OMB No 2040-0086
Approval expires 5-31-92

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER *(list)*	B. LATITUDE 1. DEG.	2. MIN.	3. SEC.	C. LONGITUDE 1. DEG.	2. MIN.	3. SEC.	D. RECEIVING WATER *(name)*
001	39	46	00	84	10	30	Mad River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation, and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-FALL NO. *(list)*	2. OPERATION(S) CONTRIBUTING FLOW: a. OPERATION *(list)*	b. AVERAGE FLOW *(include units)*	3. TREATMENT: a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
	Recovery Well	300 GPM	Stripper Tower		
001	Storm Water Runoff	6 GPM			

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any the discharges described in Items II-A or B intermitter seasonal?

☐ YES *(complete the following table)* ☒ NO *(go ction III)*

1 OUTFALL NUMBER *(list)*	2 OPERATION(s) CONTRIBUTING FLOW *(list)*	3 FREQUENCY		4 FLOW				
		a DAYS PER WEEK *(specify average)*	b MONTHS PER YEAR *(specify average)*	a FLOW RATE *(in mgd)*		b TOTAL VOLUME *(specify with units)*		c DU ATIO *(in day*
				1 LONG TERM AVERAGE	2 MAXIMUM DAILY	1 LONG TERM AVERAGE	2 MAXIMUM DAILY	

III. PRODUCTION

A Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES *(complete Item III-B)* ☒ NO *(to to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☐ YES *(complete Item III-C)* ☐ NO *(go to Section IV)*

C If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and unit used in the applicable effluent guideline, and indicate the affected outfalls

1 AVERAGE DAILY PRODUCTION			2 AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of waste water treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and gran or loan conditions.

☐ YES *(complete the following table)* ☒ NO *(go to Item IV B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3 BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a NO.	b SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B OPTIONAL You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affec your discharges)* you now have underway or which you plan Indicate whether each program is now underway or planned and indicate your actual o planned schedules for construction ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

EPA NUMBER (copy from Item 1 of Form 1)

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in y possession.

1 POLLUTANT	2 SOURCE	1 POLLUTANT	2 SOURCE
None			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES *(list all such pollutants below)* ☒ NO *(go to Item VI-B)*

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES *(identify the test(s) and describe their purposes below)* ☒ NO *(go to Section VIII)*

VIII CONTRACT ANALYSIS INFORMATION

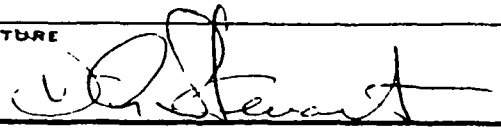
Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
FORE Testing Laboratories, Inc.	6015 Manning Road Miamisburg, OH 45342	(513)866-5908	VOC, Semi Volatil Metals
HOK/K Industrial, Inc.	2490 Technical Dr. P.O. Box 3004 Miamisburg, OH 45343-3004	(513) 866-4211	Temp pH Spec. Cond. Color

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (type or print)	B. PHONE NO. (area code & no.)
DAVID A. STEWART, PRESIDENT	(513) 224-0711
C. SIGNATURE	D. DATE SIGNED
	11/29/95

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS

EPA I.D. NUMBER (copy from Item 1 of Form 1): 01100108987

OUTFALL NO: 001

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	<5	<8.2					1	mg/L	kg			
b. Chemical Oxygen Demand (COD)	<5	<8.2					1	mg/L	kg			
c. Total Organic Carbon (TOC)	78	127.37	20.93	34.17	3.48	9.62	52	mg/L	kg			
d. Total Suspended Solids (TSS)	2	<3.3					1	mg/L	kg			
e. Ammonia (as N)	0.05	<0.09					1	mg/L	kg			
f. Flow	VALUE 300		VALUE 300		VALUE 288		365	gal per	min	VALUE		
g. Temperature (winter)	VALUE 17.20		VALUE 15.375		VALUE 14.17		26	°C		VALUE		
h. Temperature (summer)	VALUE 21.1		VALUE 19.18		VALUE 16.686		26	°C		VALUE		
i. pH 1 week	MINIMUM 7.63	MAXIMUM 8.46	MINIMUM 7.86	MAXIMUM 8.34			52	STANDARD UNITS				

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X									mg/L		0.09		backgrou
b. Chlorine Total Residual		X								mg/L		0		"
c. Color	X													"
d. Fecal Coliform		X								col/100ml		4		"
e. Fluoride (16984-48-8)	X									mg/L		0.3		"
f. Nitrate-Nitrite (as N)	X									mg/L		0.53		"

CONTINUE ON REVERSE

ITEM V B CONTINUED FROM FRONT

1 POLLUTANT AND CAS NO. (If available)	2 MARK 'X' a. BELIEVED PRESENT	2 MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO OF ANALYSES	4 UNITS a. CONCENTRATION	4 UNITS b. MASS	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	b. NO OF ANALYSES
g Nitrogen, Total Organic (as N)	X												Background	
h Oil and Grease		X												"
i Phosphorus (as P), Total (7723 14 0)	X									ppm		3		"
j Radioactivity														
(1) Alpha, Total	X									pc/L		2		"
(2) Beta, Total	X									pc/L		2.5		"
(3) Radium, Total	X									pc/L		2		
(4) Radium 226, Total	X									pc/L		1		"
k Sulfate (as SO_4) (14808 79 8)	X									mg/L		78.3		"
l Sulfide (as S)	X													"
m Sulfite (as SO_3) (14265 45 3)	X													"
n. Surfactants		X												"
o Aluminum, Total (7429 90 5)		X								mg/L		<0.5		"
p Barium, Total (7440 39-3)	X									mg/L		<0.5		"
q. Boron, Total (7440 42-8)		X												"
r. Cobalt, Total (7440-48-4)		X												"
s Iron, Total (7439 89 6)	X									mg/L		0.39		"
t. Magnesium, Total (7439 95 4)	X									mg/L		28.33		"
u Molybdenum, Total (7439 98 7)		X												"
v Manganese, Total (7439 96 5)		X								mg/L		<0.05		"
w. Tin, Total (7440 31 5)		X								mg/L		<0.01		"
x Titanium, Total (7440-32 6)		X												"

EPA I D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OH0108987	1IN00134001

ONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present Mark "X" in column 2-c for each pollutant you believe is absent If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2 4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged Note that there are 7 pages to this part, please review each carefully. Complete one table *(all 7 pages)* for each outfall See instructions for additional details and requirements

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TEST-ING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
M Antimony, otal (7440 36 0)			X												
M. Arsenic, Total 440 38-2)			X												
M Beryllium, otal, 7440 41 7)			X												
M Cadmium, otal (7440 43 9)			X												
M. Chromium, otal (7440 47-3)	X		X	<20	<33					4	ug/L	g			
M Copper, Total 440 50-8)	X		X	<20	<33					4	ug/L	g			
M Lead Total 439 92 1)	X		X	<100	<163.5					4	ug/L	g			
M Mercury, Total 439 97 6)			X												
M. Nickel, Total 440 02-0)	X		X	<40	<65.4					4	ug/L	g			
DM. Selenium, otal (7782-49-2)			X												
IM Silver, Total 440 22-4)			X												
2M Thallium, otal (7440-28-0)			X												
3M. Zinc, Total 440-66-6)	X	X		21	34.29	-	-	<21	<34.29	2	ug/L	g			
4M. Cyanide, otal (57-12-5)	X		X	<0.02	<0.04					4	ug/L	g			
5M. Phenols, otal			X												
DIOXIN															
2,3,7,8-Tetra chlorodibenzo P dioxin (1764-01 6)			X	DESCRIBE RESULTS											

ONTINUED FROM THE FRONT

POLLUTANT AND CAS NUMBER (if available)	2 MARK 'X' a	b	c	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG VALUE (if available) (2) MASS	d. NO OF ANALYSES	4 UNITS a. CONCENTRATION	4 UNITS b. MASS	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5 INTAKE (optional) b. NO OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
V. Acrolein (107-02-8)			X												
V. Acrylonitrile (107-13-1)	X		X												
V. Benzene (71-43-2)	X		X												
V. Bis (Chloroethyl) Ether (111-44-4)			X												
V. Bromoform (75-25-2)			X												
V. Carbon Tetrachloride (56-23-5)	X		X												
V. Chlorobenzene (108-90-7)	X		X												
V. Chlorodibromomethane (124-48-1)			X												
V. Chloroethane (75-00-3)	X	X		1.6	2.6	-	-	<1.6	<2.5	1	ug/L	g	<5	<7.9	12
V. 2 Chloroethylvinyl Ether (110-75-8)			X												
V. Chloroform (67-66-3)	X		X												
V. Dichlorobromomethane (75-27-4)			X												
V. Dichlorodifluoromethane (75-71-8)			X												
V. 1,1 Dichloroethane (75-34-3)		X		<0.1	<0.2	-	-	<0.1	<0.2	12	ug/L	g	<17	<26.8	
V. 1,2 Dichloroethane (107-06-2)	X	X		0.8	1.3	-	-	0.6	0.9	3	ug/L	g	<2.5	<3.9	12
V. 1,1 Dichloroethylene (75-35-4)		X		<1	<2	-	-	<1	<2	12	ug/L	g	<27.8	<43.8	5
V. 1,2 Dichloropropane (78-87-5)	X		X												
V. 1,3 Dichloropropylene (542-75-6)	X		X												
V. Ethylbenzene (100-41-4)	X		X												
V. Methyl Bromide (74-83-9)			X												
V. Methyl Chloride (74-87-3)	X		X												

TINUED FROM PAGE V 4

0110108987 | 1IN00134001

POLLUTANT AND CAS NUMBER (If available)	2 MARK X			3 EFFLUENT							4 UNITS		5 INTAKE (optional)		
	a. TEST INCLUDED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (If available) (2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (If available) (2) MASS	d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO OF ANALYSES
MS FRACTION – VOLATILE COMPOUNDS (continued)															
, Methylene ride (75 09 2)	X		X												
, 1,1,2,2-Tetra roethane 34-5)			X												
, Tetrachloro- lene (127 18-4)		X		12.0	19.6	-	-	2.95	4.64	12	ug/L	g	<173.2	<272.6	11
, Toluene 1-88 3)			X												
, 1,2-Trans- loroethylene 1-60-5)		X		<1	<1.6	-	-	<1	<1.6	12	ug/L	g	<5	<7.9	12
, 1,1,1-Tri roethane 55-6)		X		14	22.9	-	-	<3.5	<5.5	11	ug/L	g	<218	<344.6	11
, 1,1,2 Tri roethane 00-5)	X	X		0.2	0.3	-	-	<0.2	<0.32	2	ug/L	g	<5	<7.9	12
Trichloro lene (79 01 6)		X		29.0	47.4	-	-	5.94	9.35	12	ug/L	g	163.4	257.2	12
, Trichloro romethane 69-4)			X												
, Vinyl ride (75 01 4)	X	X		<1	<1.6	-	-	<1	<1.6	12	ug/L	g	<5	<7.9	12
MS FRACTION – ACID COMPOUNDS															
2 Chlorophenol 57 8)			X												
2,4-Dichloro ol (120 83 2)			X												
2,4 Dimethyl ol (105 67 9)	X		X												
4,6-Dinitro O- ol (534 52 1)	X		X												
2,4 Dinitro ol (51-28 5)	X		X												
2 Nitrophenol 75 5)	X		X												
4 Nitrophenol 02 7)	X		X												
P Chloro M ol (59 50 7)			X												
Pentachloro ol (87 86 5)			X												
Phenol 95 2)	X		X												
2,4,6 Tri															

CONTINUED FROM THE FRONT

1 POLLUTANT AND CAS NUMBER (if available)	2 MARK 'X'			3 EFFLUENT							4 UNITS		5 INTAKE (optional)		
	a. Testing required by permit	b. Believed present	c. Believed absent	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X		X												
2B. Acenaphtylene (208-96-8)	X		X												
3B. Anthracene (120-12-7)	X		X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) Anthracene (56-55-3)	X		X												
6B. Benzo (a) Pyrene (50-32-8)	X		X												
7B. 3,4 Benzo-fluoranthene (205-99-2)	X		X												
8B. Benzo (ghi) Perylene (191-24-2)			X												
9B. Benzo (k) Fluoranthene (207-08-9)	X		X												
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)			X												
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X												
12B. Bis (2-Chloroso-propyl) Ether (102-60-1)			X												
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)	X		X												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)	X		X												
19B. Dibenzo (a,h) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)	X		X												
21B. 1,3-Dichloro-benzene (541-73-1)	X		X												

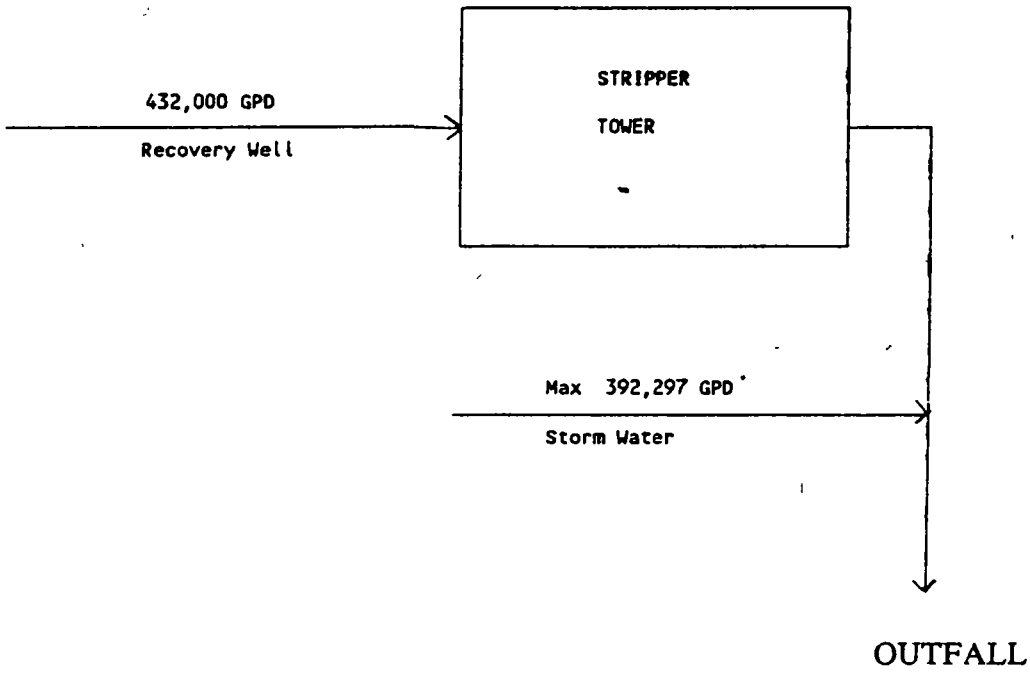
POLLUTANT AND CAS NUMBER (if available)	2 MARK 'X'			3. EFFLUENT							4 UNITS		5 INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
B. 1,4-Dichlorobenzene (106-46-7)	X		X												
B. 3,3'-Dichlorobenzidine (91-94-1)			X												
B. Diethyl phthalate (84-66-2)	X		X												
B. Dimethyl phthalate (131-11-3)	X		X												
B. Di-N-Butyl phthalate (84-74-2)	X		X												
B. 2,4-Dinitrotoluene (121-14-2)			X												
B. 2,6-Dinitrotoluene (606-20-2)			X												
B. Di N-Octyl phthalate (117-84-0)			X												
B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)			X												
B. Fluoranthene (206-44-0)	X		X												
B. Fluorene (86-73-7)	X		X												
B. Hexachlorobenzene (118-74-1)	X		X												
B. Hexachlorobutadiene (87-68-3)	X		X												
B. Hexachlorocyclopentadiene (77-47-4)			X												
B. Hexachloroethane (67-72-1)	X		X												
B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
B. Isophorone (78-59-1)			X												
B. Naphthalene (91-20-3)	X		X												
B. Nitrobenzene (98-95-3)	X		X												
B. N Nitrosodimethylamine (62-75-9)			X												
B. N Nitrosodi Propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1 POLLUTANT AND CAS NUMBER (if available)	2 MARK 'X' a. TESTING REQUIRED BY PERMIT	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3 EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4 UNITS a. CONCENTRATION	4 UNITS b. MASS	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5 INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5 INTAKE (optional) b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)	X		X												
45B. Pyrene (129-00-0)	X		X												
46B. 1,2,4-Trichlorobenzene (120-82-1)	X		X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK X a. TESTED	b. REQUIRED	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVRG. VALUE (2) MASS	5. INTAKE (optional) b. NO OF ANALYSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

Schematic of Water Flow
Gem City Chemical
Dayton, Ohio - Montgomery County



Note: All process water is disharged to POTW.

* - Based on Dayton 24 hour maximum rainfall

Proposed
Changes to Terms and Conditions
for Renewal of NPDES Permit 1IN00134

Gem City Chemicals has demonstrated a consistent history of waste water effluent characteristics over the past five years. Upon renewal of this permit, Gem City Chemicals would like to see the following modifications made to the existing permit. These comments echo those made at the last permit renewal April 18, 1991 - Comments on Behalf of Gem City Chemicals.

1. Reduce frequency of Effluent Characteristic Testing from 1/Month to 1/Quarter on page 2 of 12 OEPA 1IN00134*AD.

   Basis: Gem City Chemical generated weekly effluent data for more than one year and has generated monthly effluent data for almost five years. As reflected in the permit application, the levels detected have remained fairly constant throughout the monitoring period. As the agency is aware the cost of these scans is substantial.

2. Eliminate semi-volatile and metals testing from 2/Year to 0/year on Page 3 and 4 of 12 of 12 OEPA 1IN00134*AD.

   Basis: Gem City Chemicals does not process metals, cyanide or semi-volatile compounds. The contamination on site is not related to handling these materials, but instead the handling of VOC's. Sampling data over the last five years indicates that metals, cyanide, and semi-volatiles are not present with the exception of zinc at barely detectable levels and bis (2-ethylhexyl) phthalate. As a result of the testing Gem City Chemicals again requests that metals, cyanide, and semi-VOC's be deleted in the final period. We further request that any data which supports the inclusion of this testing be provided to us.

Please consider these modifications while renewing this NPDES permit.

HOK/K

97 81 3712 961201

4500

NTHLY REPORT FORM

GEM CITY CHEMICALS, INC. 1IN00134001 MAY 1997 1 2 11/13/96 OH0108

1287 AIR CITY AVENUE 001 FINAL EFFLUENT PRIOR TO DISCHARGE TO STORM S
DAYTON 45404 MONTGOMERY

FORM

	CONDUI FLOW MGD	WATER TEMP. C	PH S.U.	RESIDU DS-105 MG/L	T ORG C MG/L	TOLUEN UG/L	TETRAC OROETH UG/L	11DICH ROETHA TOTWUG	11DICH ROETHY TOTWUG	111TR LOROE UG/L
	50050	00010	00400	00515	00680	34010	34475	34496	34501	3450
01	0.432									
02	0.432									
03	0.432									
04	0.432									
05	0.432	15.0	7.1	594	3.74	AA	AA	AA	AA	AA
06	0.432									
07	0.432	16.1	8.2							
08	0.432									
09	0.432									
10	0.432									
11	0.432									
12	0.432									
13	0.432									
14	0.432	15.5	8.2							
15	0.432									
16	0.432									
17	0.432									
18	0.432									
19	0.432									
20	0.432									
21	0.432	15.0	8.2							
22	0.432									
23	0.432									
24	0.432									
25	0.432									
26	0.432									
27	0.432									
28	0.432	15.5	8.2							
29	0.432									
30	0.432									
31	0.432									
	13.392	62.1		594	3.74					
	0.432	15.5		594	3.74					
	0.432	16.1		594	3.74					
	0.432	15.0		594	3.74					
	Detection Limits					2	5	2	5	5

REPORTER

712 961201 4500

FORM

CITY CHEMICALS, INC. 1IN00134001 MAY 1997 2 2 11/13/96 OH0108

1287 AIR CITY AVENUE 001 FINAL EFFLUENT PRIOR TO DISCHARGE TO STORM S
DAYTON 45404 MONTGOMERY

FORM

	TRAN-1 DICHLO UG/L	TRICHL ETHYLE UG/L	CHLORO FORM UG/L	112 TRI CHLETH UG/L	12DICHL OROETH UG/L
	34546	39180	32106	34511	34531
)1					
)2					
)3					
)4					
)5	AA	7.0	AA	AA	AA
)6					
)7					
)8					
)9					
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
0					
1					
		7.0			
		7.0			
		7.0			
		7.0			

tection Limits:

5	5	2	5	5

REPORTER

File

Re: Montgomery County
Hazardous Materials
Gem City Chemicals
OHD004472940
HW-315

Mr. David Stuart
Gem City Chemicals
1287 Air City Avenue
Dayton, Ohio 45404

April 26, 1982

Dear Mr. Stuart:

On April 22, 1982, I conducted a transporter inspection at your facility as per the Resource Conservation and Recovery Act of 1976 and the Ohio Hazardous Waste Rules. At the time of the inspection, I found no gross errors.

As a reminder, please tell your drivers to maintain their manifests and insure all applicable signatures are present. Also remember that as a transporter you cannot store manifested hazardous materials longer than ten (10) days.

If you have any questions, please feel free to contact this office.

Sincerely,

David P. Duell/dd

David P. Duell
Hazardous Materials Management Section

DPD/sgb

cc: Ms. Kathy Homer, U.S. EPA
cc: Ms. Paula Cotter, DHMM/Columbus

Enclosures

17 Feb 88
Date and Time of Inspection

RCRA INTERIM STATUS INSPECTION FORM

HWFAB # HW-315

PART 1. GENERAL INFORMATION

U.S. EPA I.D. # OHO 004 472 940

Facility: Gem City Chemicals Address: 1287 Air City Ave. City: Dayton

State: Ohio Zip Code: 45404 County: Montgomery Telephone: _____

INSPECTION PARTICIPANTS(S)

	(Name)	(Title)	(Telephone)
1.			
2.			
3.			

INSPECTOR(S)

1.	David P. Duell	Ohio E.P.A. / E.E.	513-461-4670
2.			
3.			

INSTALLATION ACTIVITY

Mark One

- ☐ Generator only (G)
- ☒ Transporter (T)
- ☐ TSDF only
- ☐ G-T
- ☐ G-TSDF
- ☐ T-TSDF
- ☐ G-T-TSDF

If the site is a TSDF, check the boxes indicating which regulations are applicable.

- ☐ General Facility Standards, Preparedness and Prevention, Contingency and Emergency, Manifests/Records/Reporting, Closure
- ☐ Containers S01
- ☐ Tanks S02/T01
- ☐ Surface Impoundments S04/T02
- ☐ Incineration/Thermal Treatment
- ☐ Waste Piles S03
- ☐ Land Treatment D81
- ☐ Landfills D80
- ☐ Chemical/Physical/ Biological T04
- ☐ Groundwater Monitoring
- ☐ Post-Closure

Revised 9/15/82

OhioEPA

Re: Montgomery County
Hazardous Materials
Gem City Chemicals
OHD 004472940
HW-315

Gem City Chemicals
1287 Air City Avenue
Dayton, Ohio 45404

February 22, 1983

Gentlemen:

On 14 February 1983, I inspected your facility to determine your compliance with the Ohio Hazardous Waste Rules and the Resource Conservation and Recovery Act of 1976.

At the time of the inspection, I found your facility to be in substantial compliance with all applicable regulations. Please remember that transporters can delay disposal of hazardous wastes for only 10 days.

If you have any questions, please don't hesitate to contact me.

Sincerely,

David P. Duell
Hazardous Materials Management

DPD/dkp

cc: Ken Westlake, U.S. EPA
cc: Paula Cotter, OEPA

Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402-2086 (513) 461-4670

FMC AFTA
CHD004472940 SQG, TRANS

V002 acetone
V140 isobutyl alch.
V154 methanol
V161 Methyl isobutyl Ketone
V080 dichloromethane
V159 MEK
V210 tetrachloroethylene
V220 toluene
V228 trichloroethylene
V226 1,1,1, trichloroethane
V239 Xylene

inter-office communication

to: Jeff Hines date: 6/7/89

from: Brian Nickel DGW

subject: Gem City Chemical

Tom Winston has brought to my attention that Gem City Chemical located at 1287 Fir City Ave., Dayton Ohio, has received a permit to operate a vapor extraction system. A phone call to RAPCA revealed that the system is designed to vent volatile organics such as benzene, toluene, xylene, TCE, isopropanol and etc. Our ground water file has limited information but indicates that they have packaged solvents for shipping in the past.

I would appreciate it if you could assign this site to an inspector and we could get togethes and do a site visit sometime late this week or late next week. Please have them contact me as soon as possible.

PRE-VISIT SITE CHARACTERIZATION & SAFETY ANALYSIS

Date: 6-16-89

Site Name: GEM CITY CHEMICAL

Address:

Temperature in Site Area: 68°

Wind Direction & Speed:

Reason for Visit:
INSPECTION/INVESTIGATION

Type of Suspect Containers:
Drums X Lagoons ____
Underground Tanks ____
Above ground Tanks ____
Cylinder ____ Other ____

Topopgraphy: Flat X
Hillside ____
Rolling ____

Other OEPA involvement?
ER ____ (for immediate spill action)
SIU ____ (for illegal activities)
Other X DGW

Accessible by: Air ____ Roads X Water ____

POTENTIAL FOR HUMAN EXPOSURE:
Low X
Moderate ____
Great ____

Does the site need to be secured before you leave? (fencing, police patrols, immediate remedial action, etc.)
No ____
Yes ____

EMERGENCY ASSISTANCE:

	Name	Phone
Fire Dept.	224-9241	
EMS:	224-9241	
Hospital:	MVH	223-6192
Law Enforcement:	222-9511	
Ohio Highway Patrol: Emergency		1-800-525-5555

HAZARDOUS SUBSTANCES (Suspected and/or known) Use additional if needed	Quantity	Effects on Humans

Protection Level: ____ A ____ B ____ C X D

Signature/Division/Date

46

6-16-89

GEM CITY CHEM

DAVE STUART GCC

AL DENNEY GCC

BRIAN DICKEL OEPA

NO LONGER HAULS HAZ. WASTE since 1.5 YEARS AGO

FACILITY DOES NOT GENERATE HAZARDOUS WASTE

DRUM WASHING STATION.. WASHES DRUMS CONTAINING ACIDS & BASES.

PRETREATMENT PERMIT?

6-20 RG

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
40 South Main Street
Dayton, Ohio 45402
(513) 449-6357

Richard F Celeste
Governor

June 28, 1989

Re: GEM CITY CHEMICALS INC.
HAZARDOUS WASTE
MONTGOMERY COUNTY
OHD004472940
G-T

Mr. Dave Stewart, Manager
Gem City Chemicals Inc.
1287 Air City Avenue
P.O. Box 251
Dayton, Ohio 45404

Dear Mr. Stewart:

On June 16, 1989, Mr. Brian Nickel (OEPA/SWDO) and I conducted a Small Quantity Generator/Transporter Compliance Evaluation Inspection of your facility to determine compliance with appropriate hazardous waste regulations.

It was determined that Gem City Chemicals Inc. no longer generates or transports hazardous waste. You indicated that Gem City Chemicals Inc. ceased activities regulated under RCRA approximately 1 1/2 years ago. Documentation maintained on site supported this claim.

Your USEPA Hazardous Waste Identification number is site specific, therefore it may be advisable to maintain your current status in the event that your company should desire to resume regulated activities.

If you should have any questions, please feel free to call me.

Sincerely,

Frank Bryant

Frank Bryant
Division of Solid and Hazardous Waste
Management Unit

FB/cjf

cc: Dave Sholtis, DSHWM/CO
Brian Nickel, DGW/SWDO

REPORT ON APPLICATION AND PLANS FOR PERMIT TO INSTALL FOR A GROUNDWATER TREATMENT SYSTEM FOR GEM CITY CHEMICALS, INC., MONTGOMERY COUNTY DAYTON, OHIO

INTRODUCTION:

The application and plans for Permit to Install (PTI) Application No. 05-3994 for Gem City Chemicals, Inc., Dayton, Ohio, were received by the Southwest District Office (SWDO) of the Ohio Environmental Protection Agency (Ohio EPA) on August 31, 1989. A National Pollutant Discharge Elimination System (NPDES) permit application was received on this same date. The applications and plans were submitted by David A. Stewart, President. Q-Source Engineering, Inc., Miamisburg, Ohio, designed the treatment system. Site inspections of the facility were conducted on September 28 and December 13, 1989. This application is for the installation of a groundwater treatment system to remove volatile organic compounds (VOCs). It was submitted in conjunction with an interim action for groundwater remediation initiated by the Division of Emergency and Remedial Response and the Division of Groundwater.

A letter was issued to the company by Ohio EPA on November 3, 1989, finding acceptable the interim operation of the groundwater treatment and discharge system prior to permit issuance.

Gem City Chemicals, Inc., is located at 1287 Air City Avenue, immediately south of Stanley Avenue. It is an industrial chemicals (acids, caustic, solvents) distribution, blending, and repackaging facility. A February, 1989 environmental assessment report prepared by Q-Source Engineering indicated soil and groundwater contamination at the site. In June, 1989, Ohio EPA conducted an on-site inspection and meeting at Gem City Chemicals and subsequently initiated its groundwater remediation action. Four groundwater monitoring wells were installed in November, 1987, six more in August and September, 1988, and a piezometer was installed in January, 1989. A soil vapor extraction system was installed in March, 1989.

SUMMARY OF NEW FACILITIES

Groundwater is pumped from the recovery well to the treatment system at an average flow rate of 250 gpm (300 gpm maximum). The treatment system consists of a packed-tower air stripping column designed to remove 99.7 to 99.9% of all volatile organic compounds (VOCs) in the groundwater. The air stripper is a Duall Industries, Inc., unit, 32 feet high, having 24 feet of selected packing material, a fresh air blower, and a water pump. The fresh air blower delivers 1500 cfm of fresh air through the packed tower. Groundwater enters the distributor at the top of the tower and then cascades down the tower through the packing material, countercurrent to the fresh air flow.

VOCs in the water are transferred to the air and removed. The treated groundwater effluent from the air stripper flows by gravity to the city storm sewer via a 6-inch pipe. The 78-inch storm sewer flows southeast along Findlay Street (Stanley Avenue), enlarges to a 90-inch storm sewer, and discharges to the Mad River at the Findlay Street bridge (RM 1.63).

The packed tower is cleaned periodically (i.e. once/month) using dilute sulfuric acid solution. Cleaning wastewater is discharged to the city sanitary sewer.

EVALUATION AND RECOMMENDATIONS

The treatment system used by Gem City Chemicals to remove the VOCs employs countercurrent air stripping technology. The compounds present in the groundwater, as indicated by monitoring well results, include 1,1,1-trichloroethane (TCA), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), trans-1,2-dichloroethene, tetrachloroethene, 1,1-dichloroethane, 1,1-dichloroethene, and chloroform. Concentrations detected range up to 2000 ug/l, with 1,1,1-TCA, TCE, and cis-1,2-DCE being present in the highest concentrations. The design maximum effluent concentrations of these contaminants are to meet Ohio EPA Drinking Water Quality Standards (final and proposed).

Initial start-up and operations of the treatment system began in December, 1989. The system became fully operational, resulting in a continuous discharge to the storm sewer, in February, 1990. Discharge monitoring requirements and effluent limitations for the continued operation of the system were established in an Ohio EPA letter dated February 6, 1990.

These requirements include weekly monitoring for specific conventional and organic parameters, including four VOCs (1,1,1-TCA, TCE, cis and trans-1,2-DCE). In addition, a complete VOC analysis is required once a month, and an analysis of 40 CFR Part 414.100, Subpart J, is required semi-annually at this time. Monitoring results for each month are reported to the Ohio EPA, SWDO, by the 15th day of the next month. All these requirements were established as an interim measure until an NPDES permit could be issued.

Review of effluent results reported since February, 1990, indicate the discharge is in compliance with the requirements and limitations established in the February 6, 1990 letter. These discharge limitations are based on both best available technology (BAT) standards and Ohio water quality standards (WQS). The BAT standards for the four VOCs presently monitored are taken from the Organic Chemicals, Plastics, and Synthetic Fibers point source category-40 CFR Part 414.100, Subpart J. In writing the NPDES permit, the effluent limitations will be re-evaluated, taking into account all present policies regarding BAT standards and applicable WQS (drinking water and surface water standards).

Results will also be reviewed to determine whether the presently monitored parameters adequately reflect the quality of the effluent.

COST AND CONSTRUCTION SCHEDULE

Construction/installation of the groundwater air stripper treatment system and recovery well started in October, 1989, and was completed in November, 1989. Construction cost was estimated at $62,000. Temporary operation of the treatment system occurred in December, 1989. Following a short shutdown and evaluation period, it became fully operational in February, 1990

CONCLUSION

It is recommended these plans be approved with the usual conditions and the attached special conditions.

Reviewed by: Michael W Zimmerman 1-15-91
Michael W. Zimmerman
Division of Water Pollution Control
Permits Group

Review approved by: _____
Richard L. Shoemaker, P.E.
Division of Water Pollution Control
Permits Group Leader

Ohio EPA
State of Ohio Environmental Protection Agency

INITIAL POLLUTION INCIDENT REPORT 1994

I.D. Number 9404-57-1350 ☐ Confidential Status Requested/Enforcement Sensitive

Time & Date Reported 1155 4/4 Discovered 0930 4/4 Occurred 0930 4/4

Reported by (Name) David Stewart Title

Telephone 513 224 0711 Entity Reporting: Co Did Spiller Report? Y(N) Complaint? Y(N)

Suspected Spiller Gem City Chemicals Telephone

Mailing Address POB 251 Dayton, 45404

Location of Spill: (County) Montgomery (Town/TWP) Dayton (Lat & Long)

(Street Location) 1287 Air City Ave

Product Spilled HCl Amount 5,000 gal RQ? Y Type: C Size: L

Product Spilled Amount RQ? Type: Size:

Sources of Spill line on storage tank broke. Size: L Priority: 3

Areas Affected Waterway/Topography: A L W G O N ground Weather

Exposure Potential L M G E Protection Level A B C D

≈ 34% solution, most into containment area; rest of it diked.

Did You Tell Spiller To Call: The N.R.C.? Y(N) (1-800-424-8802, Washington, D.C.) The Local EPC? Y(N) (# in Duty Book)

	Send Copy	Time & Date	Talked to
District SW	☐	1210 4/4	Crawford: DR
1. USEPA 2. USCG	☐		
3. SFM 4. ORSANCO	☐		
5. ODNR Wildlife	☐		
6. DWPC or DAPC	☐		
7. DPDW 8. DSIWM	☐		
9. DHWM 10. ODH 11. ODA	☐		Paul Pardi
12. PUCO	☐		
13. PIC	☐		
14. Local APC 15. Co HD	☐		
16. PD 17. FD	☐		On Scene
18. OEMA 20. DO&G	☐		
21. DWQPA 23. DGW	☐		
24. LEPC 25. PCB	☐		On Scene
26. RRS/SIS	☐		
27. RTK	☐		Sue Netzly/DERR
28. SPCC	☐		
	☐		

(revised 1-93) EPA 0300

Business: Y(N) SARA Report: Y(N) District: Y(N) DR Received by SWS

SITE INVESTIGATION REPORT
CHRYSLER CORPORATION
DAYTON THERMAL PRODUCTS PLANT
1600 WEBSTER STREET
DAYTON, OHIO 45404

Volume II of III

Figures, Attachments, Drawings

Prepared For

Chrysler Corporation
800 Chrysler Drive
CIMS 482-00-51
Auburn Hills, Michigan 48326-2757

Prepared By

Clean Tech
2700 Capitol Trail
Newark, DE 19711
(302) 999-0924

September, 1995

Clean Tech Inc
Environmental Consultants

2700 Capitol Trail
Newark DE 19711
302•999•0924
FAX 302•999•0925

CLEAN **TECH**

September 14, 1995

Mr. Curtis Chapman
Chrysler Corporation
800 Chrysler Drive
CIMS 482-00-51
Auburn Hills, MI 48326-2757

RE: Finalized Site Investigation Report
Chrysler Corporation Dayton Thermal Products Plant
Dayton, Ohio

Dear Mr Chapman

Enclosed please find the three volume finalized document Site Investigation, Chrysler Corporation Dayton Thermal Products Plant, Dayton Ohio. This submittal includes your review comments and requested report revisions Comments received from Mr. Doug Orf are incorporated in this final submittal This document has been forwarded to Mr Orf per your request

If you have any questions, please contact Clean Tech at (302) 999-0924.

Sincerely,

Steven W. Newsom, P.G.
Principal Geologist
CLEAN TECH

Sincerely,

Deborah A. Buniski, P E
President
CLEAN TECH

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Clean Tech Inc
Environmental Consultants

2700 Capitol Trail
Newark DE 19711
302•999•0924
FAX 302•999•0925

CLEAN**TECH**

September 14, 1995

Mr Douglas J. Orf
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

RE: Finalized Site Investigation Report
Chrysler Corporation Dayton Thermal Products Plant
Dayton, Ohio

Dear Mr Orf

Enclosed please find the three volume finalized document Site Investigation, Chrysler Corporation Dayton Thermal Products Plant, Dayton Ohio This submittal includes comments and requested report revisions as received from you and Mr Curtis Chapman. This document has been forwarded to Mr Chapman.

If you have any questions, please contact Clean Tech at (302) 999-0924.

Sincerely,

Steven W. Newsom, P.G.
Principal Geologist
CLEAN TECH

Sincerely,

Deborah A. Buniski, P E
President
CLEAN TECH

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Volume II of III
Figures, Attachments, Drawings
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FIGURE 1

Site Location Map

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

FIGURE 2

Map of Facility

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

FIGURE 3

Map of Facility Showing Areas A, B, C

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

FIGURE 4

Locations of Geologic Cross-Sections

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

ATTACHMENT A

Aerial Photograph Series

Chrysler Corporation

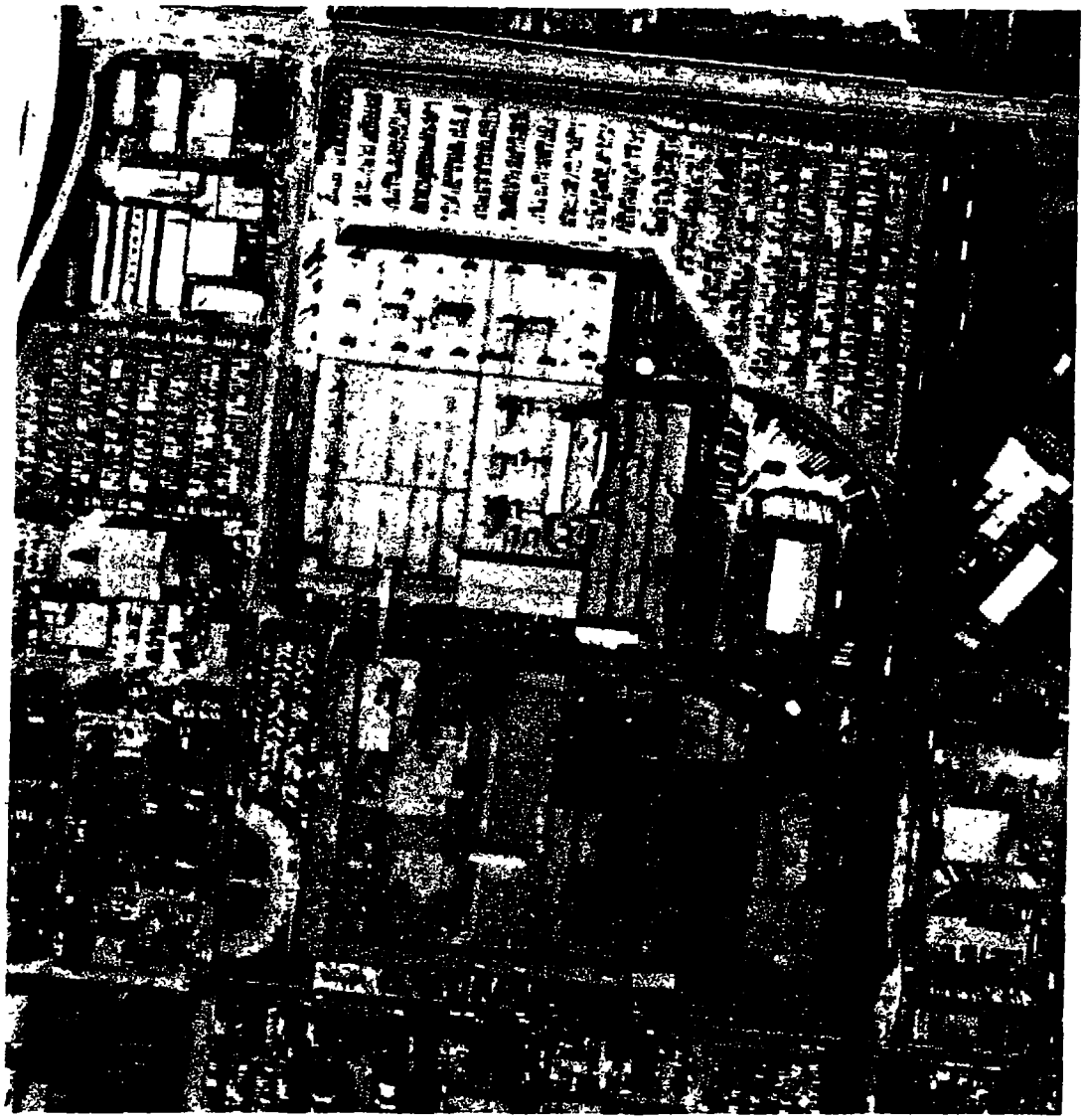
Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

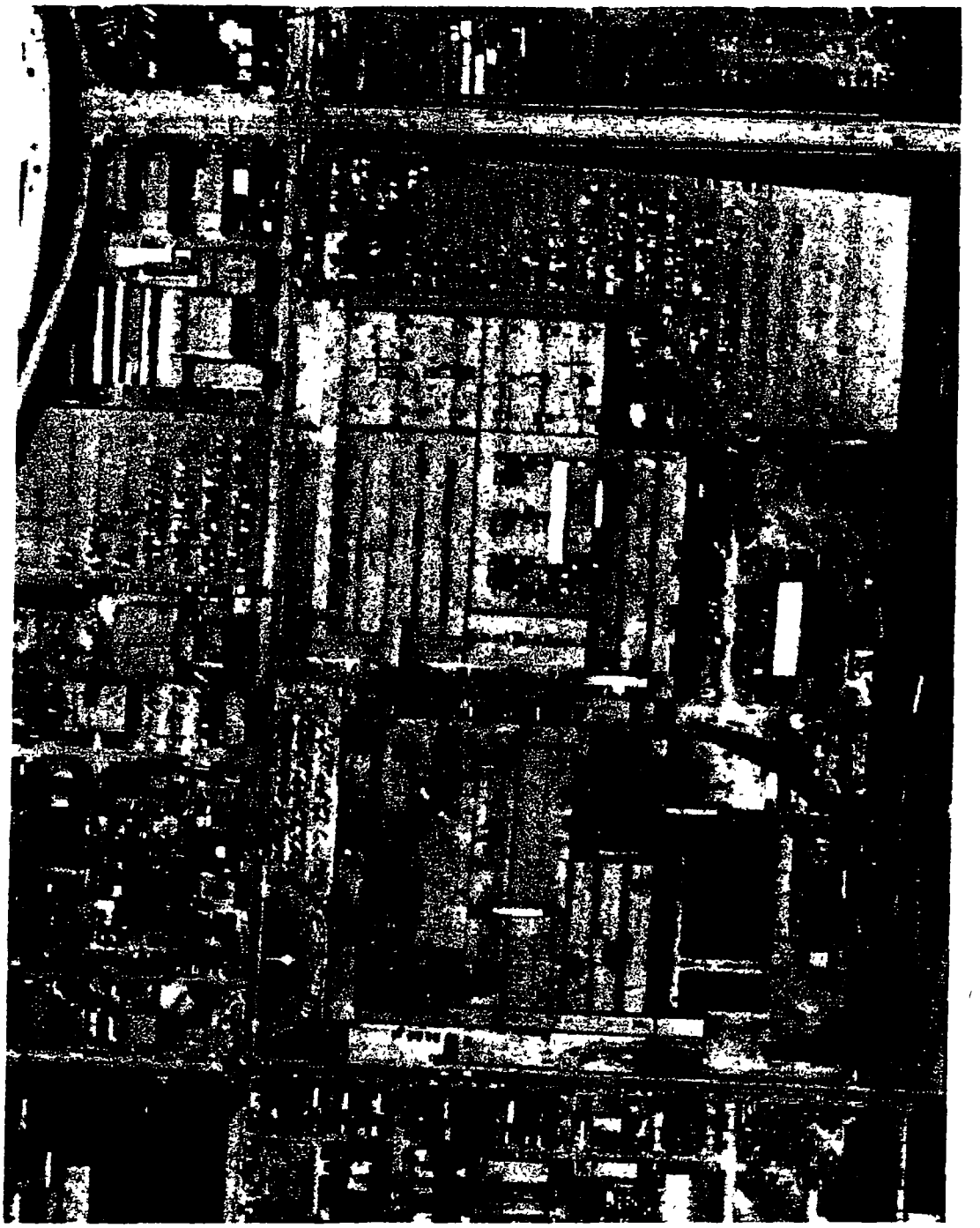
Aerial Photograph - 05-24-61

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS	Clean Tech Inc. - Newark, Delaware



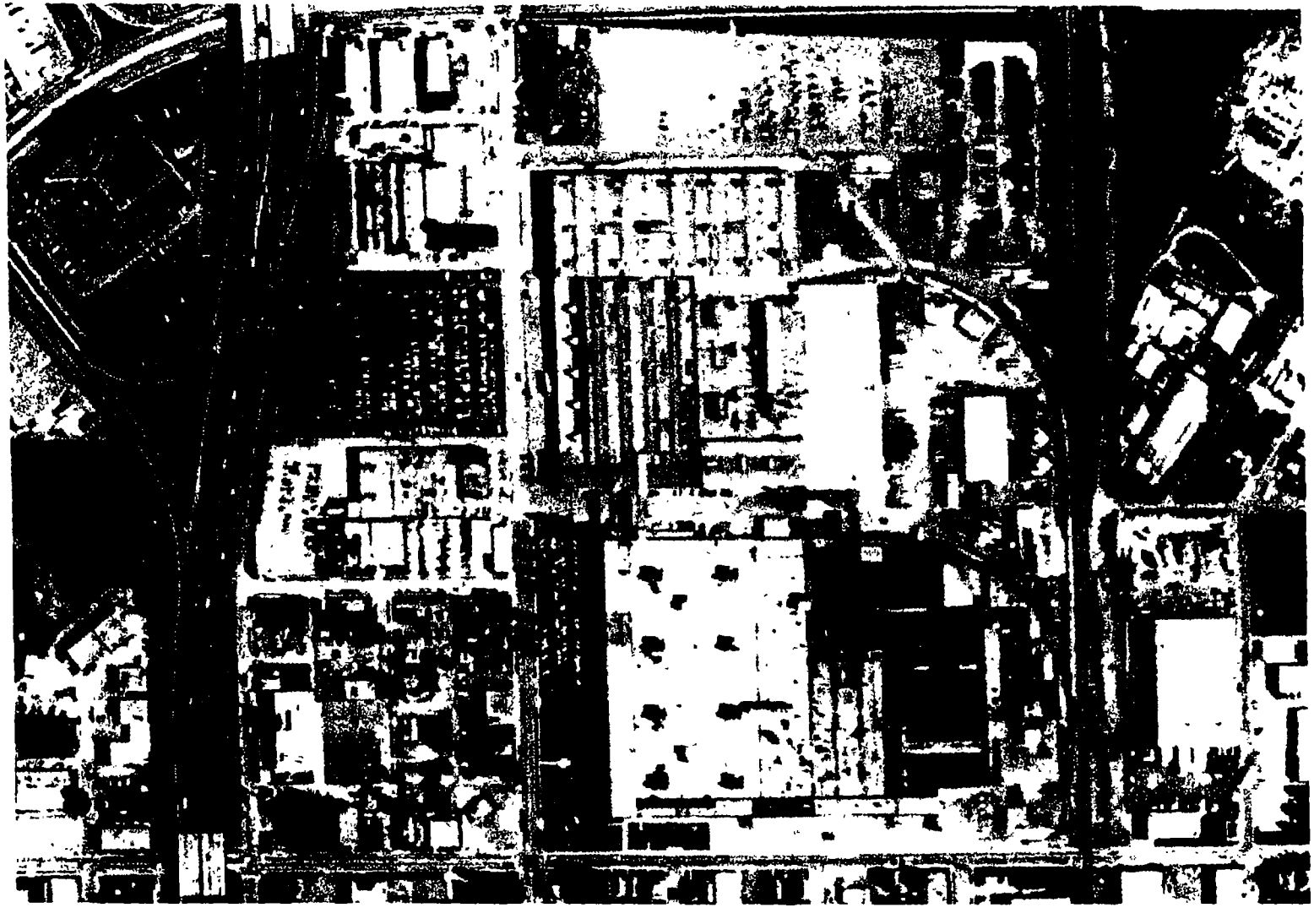
Aerial Photograph - 03-07-68

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS	Clean Tech Inc. - Newark, Delaware



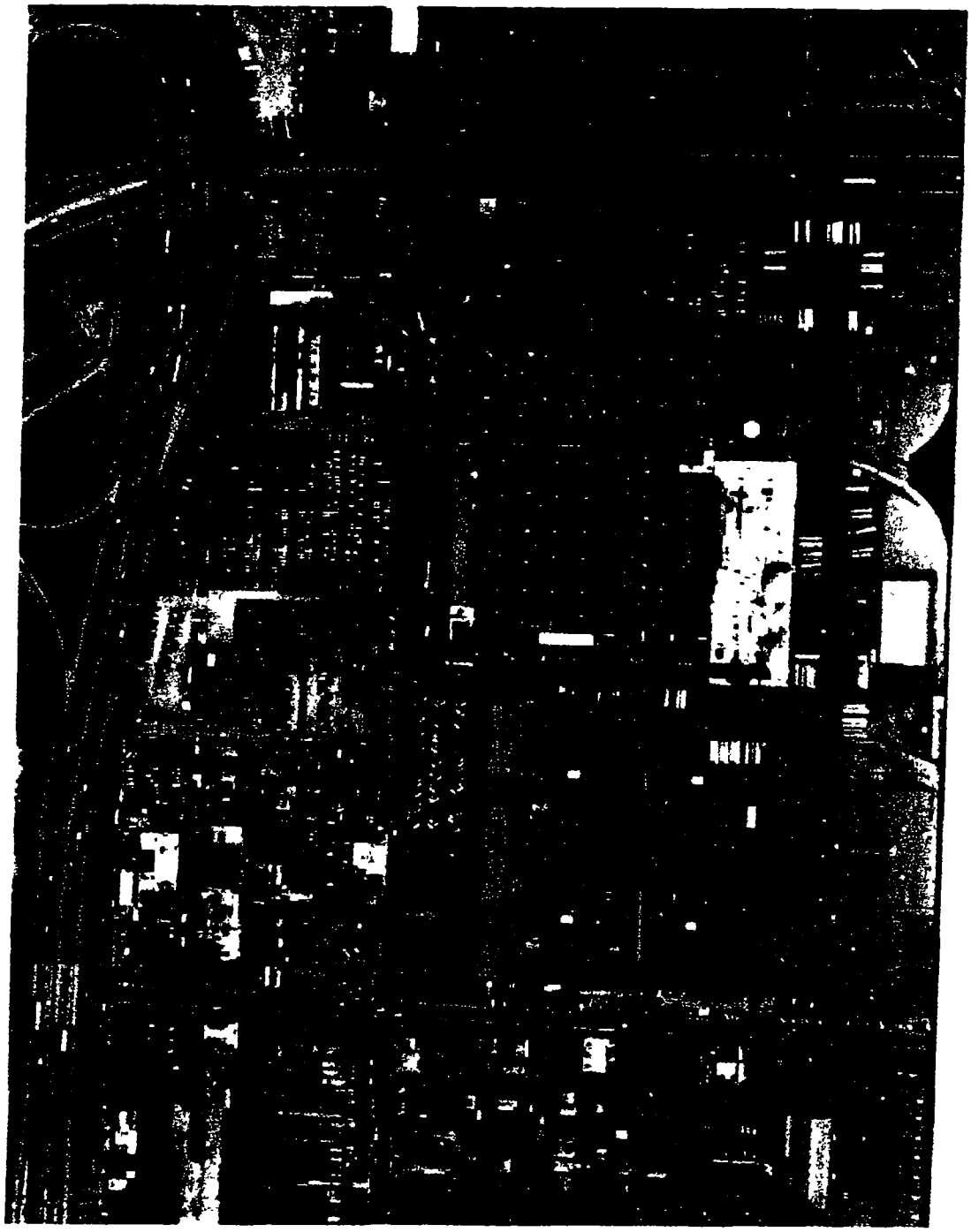
Aerial Photograph - 04-13-73

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS	Clean Tech Inc. - Newark, Delaware



Aerial Photograph - 08-31-90

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS	Clean Tech Inc. - Newark, Delaware



Aerial Photograph - 04-25-94

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS	Clean Tech Inc. - Newark, Delaware

ATTACHMENT B

Soil Vapor Survey Sample Locations

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

Site Investigation
Report of Findings
Chrysler DTPP, Dayton, Ohio
Soil Gas Survey Locations

Sample Numbers	Locations
#1--10'-Blacktop	LOCATION 1--Located in storage area near bldg.30-approx 300' from Stanley Ave fence & 6' from RR fence
#2--20'-Blacktop	LOCATION 1--Located in storage area near bldg 30-approx 300' from Stanley Ave fence & 108' off RR fence
#3--10'-Blacktop	LOCATION 2--Located in storage aea near bldg 30-approx 300' from Stanley Ave fence & 6' from property fence of RR
#4--Depth 10'-Blacktop	LOCATION 3--Located in storage area near bldg. 30-approx 9' from RR fence and 5' from Stanley Ave fence
#5--Depth 30'-Possible misconnection of sample tip Groundwater encountered at 30'-Blacktop	LOCATION 3--Located in storage area near bldg bldg 30-approx. 9' from RR fence and 5' from Stanley Ave. fence
#6--Depth 30'-Resampled at 30'	LOCATION 3--Located in storage area near bldg 30-approx. 9' from RR fence and 5' from Stanley Ave fence
#7--Depth 10'-Blacktop	LOCATION 4--Located in tractor trailer storage area approx 15' from fence on Stanley Ave
#8--Depth 10'-Soil	LOCATION 5--Located near clean storage piles near bldg. 47 on north side of RR tracks.
#9--Depth 20'-Soil	LOCATION 5--Located near clean storage piles near bldg. 47 on north side of RR tracks
#10--Depth 10'-Blacktop	LOCATION 6--Location near 47 near clean storage piles on south side of RR tracks
#11--Depth 20'-Soil	LOCATION 6--Located near bldg 47 near clean storage piles on south side of RR tracks
#12--Depth 10'-Soil	LOCATION 7--Located near bldg 47 near clean storage piles on south side of bend in RR tracks.
#13--Depth 20'-Soil	LOCATION 7--Located near bldg 47 near clean storage piles on south side of bend in RR tracks
#14--Depth 10'-Soil	LOCATION 8--Located near bldg 47 near clean storage piles on south side of RR tracks approx 90' from tanks.
#15--Depth 20'-Soil	LOCATION 8--Located near bldg 47 near clean storage piles on south side of RR tracks approx 90' from tanks
#16--Depth 10'-Soil	LOCATION 9--Located near bldg 47 approx 30' from clean storage piles.
#17--Depth 20'-Soil	LOCATION 9--Located near bldg 47 approx 30' from clean storage piles.
#18--Depth 10'-Concrete	LOCATION 10--Located near end of RR siding near bldg. 50 on west side of driveway
#19--Depth 20'-Concrete	LOCATION 10--Located near end of RR siding near bldg 50 on west side of driveway approx 10' from north end & 60' from bldg. 50

Site Investigation
Report of Findings
Chrysler DTPP, Dayton, Ohio
Soil Gas Survey Locations

Sample Numbers	Locations
#20--Depth 10'-Concrete	LOCATION 11--Located near bldg 50 on west side of driveway near boring location Approx. 63' from edge of bldg 50 & 135' from north end
#21--Depth 20'- Concrete	LOCATION 11--Located near bldg 50 on west side of driveway near boring location. Approx. 63' from edge of bldg 50 & 135' from north end
#22--Depth 10'-Concrete	LOCATION 12--Located near bldg 50 on west side of driveway Approx 280' from north end of bldg and 63' from edge of bldg
#23--Depth 20'-Concrete	LOCATION 12--Located near bldg 50 on west side of driveway. Approx 280' from north end of bldg and 63' from edge of bldg.
#24--Depth 10'-Concrete	LOCATION 13--Located off bldg 50 approx 36' off south end of bldg 50 & 9' off east side bldg
#25--Depth 20'-Concrete	LOCATION 13--Located off bldg 50 approx 36' off south end of bldg 50 & 9' off east side bldg
#26--Depth 10'-Concrete	LOCATION 14--Located near bldg 47, approx 10' off annex corner & 5' off bldg
#27--Depth 20'-Concrete	LOCATION 14--Located near bldg 47, approx. 10' off annex corner & 5' off bldg.
#28--Depth 10'-Concrete	LOCATION 15--Located off bldg 47 behind annex bldg Approx 10' from rear of bldg 49 & 25' from south side of no 47
#29--Depth 20'-Concrete	LOCATION 15--Located off bldg 47 behind annex bldg. Approx 10' from rear of bldg 49 & 25' from south side of no 47
#30--Depth 10'-Concrete	LOCATION 16--Located near former trichlor tanks on south side of bldg 50 and north side of driveway.
#31--Depth 20'-Concrete	LOCATION 16--Located near former trichlor tanks on south side of bldg 50 and north side of driveway.
#32--Depth 10'-Concrete	LOCATION 17--Located on south side of bldg 53 & on west side of trichlor tanks on north side of drive.
#33--Depth 20'-Concrete	LOCATION 17--Located on south side of bldg. 53 & on west side of trichlor tanks on north side of drive.
#34--Depth 10'-Concrete	LOCATION 18--Located on south side of bldg. 52 under conveyor bridge on north side of drive.
#35--Depth 20'-Concrete	LOCATION 18--Located on south side of bldg. 52 under conveyor bridge on north side of drive.
#36--Depth 10' Concrete	LOCATION 19--Located on south side of drive near tanks halfway between samples 11 & 12.
#37--Depth 20'-Concrete	LOCATION 19--Located on south side of drive near tanks halfway between samples 11 & 12
#38--Depth 10'-Concrete--Day 3	LOCATION 20
#39--Depth 20'-Concrete	LOCATION 20

Site Investigation
Report of Findings
Chrysler DTPP, Dayton, Ohio
Soil Gas Survey Locations

Sample Numbers	Locations
#40--Depth 10'-Concrete	LOCATION 21--Located near the trichlor tanks near former location #16
#41--Depth 20'-Blacktop	LOCATION 21--Located near the trichlor tanks near former location #16.
#42-Depth 10'-Blacktop	LOCATION 22--Located on south side of bldg. 40 on Leo Street Located near entrance gate
#43-Depth 20'-Blacktop	LOCATION 22--Located on south side of bldg. 40 on Leo Street. Located near entrance gate
#44-Depth 10'-Concrete	LOCATION 23--Located off Leo & Milburn Street
#45-Depth 20'-Concrete	LOCATION 23--Located off Leo & Milburn Street
#46-Depth 10'-Concrete	LOCATION 24--Located in the corner of the property near bldg 3A
#47-Depth 20'-Concrete	LOCATION 24--Located in the corner of the property near bldg 3A This sample was difficult to extract, possible tight clays in range of 18-20 ft
#48-Depth 10'-Concrete	LOCATION 25--Located on north side of boiler house and waste storage area.
#49-Depth 20'-Concrete	LOCATION 25--Located on north side of boiler house and hazardous waste storage area.
#50-Depth 10'-Concrete	LOCATION 26--Located near hazardous waste storage area near bldg 39
#51-Depth 20'-Concrete	LOCATION 26--Located near hazardous waste storage area near bldg. 39
#52-Depth 10'-Concrete	LOCATION 27--Located near bldg 's 47 & 49 near waste storage area.
#53-Depth 20'-Concrete	LOCATION 27--Located near bldg 's 47 & 49 near waste storage area.
#54-Depth 10'-Concrete	LOCATION 28--Located near bldg's 59 & 3A near property fence & RR tracks
#55-Depth 20'-Concrete	LOCATION 28--Located near bldg's 59 & 3A near property fence & RR tracks
#56-Depth 10'-Concrete	LOCATION 29--Located near bldg's 59 & 39 near property fence
#57-Depth 20'-Concrete	LOCATION 29--Located near bldg's 59 & 39 near property fence.
#58-Depth 7'-Soil Biopile	LOCATION 30--Located approx. 10' from toe power pole in the treament cell
#59-Depth 7'-Soil Biopile	LOCATION 31--Located in angled end of biopile near RR
#60-Depth 7'-Soil Biopile	LOCATION 32--Located on biopile near plastic storage units
#61-Depth 10'-Blacktop	LOCATION 33--Located at NE corner of property by location 3 water thru out.
#62-Depth 20'-Blacktop	LOCATION 33--Located at NE corner of property by location 3 water thru out.
#63-Depth 10'-Blacktop	LOCATION 34--Located near WWTP water at 20'

Site Investigation
Report of Findings
Chrysler DTPP, Dayton, Ohio
Soil Gas Survey Locations

Sample Numbers	Locations
#64-Depth 16'-Blacktop	LOCATION 34--Located near WWTP water at 20'
#65-Depth 10'-Blacktop/Concrete	LOCATION 35--Located in front of bldg 52, truck bay 7
#66-Depth 20'-Blacktop/Concrete	LOCATION 35--Located in front of bldg 52, truck bay 7
#67-Depth 10'-Blacktop/Concrete	LOCATION 36--Located in front of bldg 40, near helipad
#68-Depth 20'-Blacktop/Concrete	LOCATION 36--Located in front of bldg 40, near helipad
#69-Depth 10'-Concrete	LOCATION 37--Located in bldg 40B in rear coil dept
#70-Depth 20'-Concrete	LOCATION 37--Located in bldg. 40B in rear coil dept.
#71-Depth 10'-Concrete	LOCATION 38--Located in bldg. 40 near column 16
#72-Depth 20'-Concrete	LOCATION 38--Located in bldg 40 near column 16
#73-Depth 10'-Concrete	LOCATION 39--Located in bldg 40A in front of trichlor tank
#74-Depth 20'-Concrete	LOCATION 39--Located in bldg. 40A in front of trichlor tank
#75-Depth 10'-Concrete	LOCATION 40--Located in bldg 53 near dept 9214
#76-Depth 20'-Concrete	LOCATION 40--Located in bldg 53 near dept 9214
#77-Depth 10'-Concrete	LOCATION 41--Located in bldg 3A near repair shop garage door
#78-Depth 20'-Concrete	LOCATION 41--Located in bldg 3A near repair shop garage door.
#79-Depth 10'-Asphalt	LOCATION 42--Located in parking lost near guard shack & bldg. 40
#80-Depth 20'-Asphalt-(difficult drilling 17'- 19')	LOCATION 42--Located in parking lost near guard shack & bldg 40.
#81-Depth 10'-Concrete	LOCATION 43--Located on north side of bldg 47 near hazardous waste storage area.
#82-Depth 20'-Concrete	LOCATION 43--Located on north side of bldg 47 near hazardous waste storage area.
#83-Depth 10'-Concrete	LOCATION 44--In the fenced in area of gate 44
#84-Depth 20'-Concrete	LOCATION 44--In the fenced in area of gate 44
#85-Depth 10'-Concrete	LOCATION 45--Near rack storage area of former bldg. 8.
#86-Depth 20'-Concrete	LOCATION 45--Near rack storage area of former bldg 8.
#87-Depth 10'-Concrete	LOCATION 46--On the south side of bldg 50 near sample 13.
#88-Depth 20'-Concrete	LOCATION 46--On the south side of bldg 50 near sample 13
#89-Depth 10'-Concrete	LOCATION 47--Located opposite of degreaser sludge storage tank
#90-Depth 20'-Concrete	LOCATION 47--Located opposite of degreaser sludge storage tank.
#91-Depth 10'-Concrete	LOCATION 48--Located across from plastic silo storage.
#91-Depth 20'-Concrete	Concrete encountered at 18' no sample

Total 86 Samples at 44 Locations
Contour Data 49 Samples at 25 Locations

ATTACHMENT E

Soil Boring Logs

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-1
Location	Dayton, Ohio	Date Started	10/17/94
Client	Chrysler Corporation	Date Completed	10/17/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.55 MSL	Page Number	1 of 1
Water Level & Date	~26 ft BGS 10/17/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, Wtr Depth
5	4-6	S1	1.4	25-35 40-40 (75)	Poorly Graded Gravel with Clay and Sand (GP-GC); Moderate Red (5R5/4) to Light Brown (5YR6/4); Dry; Very Dense	BG, BG, 1.0 ppm Dye Test - Neg.
10	9-11	S2	1.7	18-27 32-37 (59)	Poorly Graded Gravel with Sand and Some Silt (GP); Very Light Gray (N8) to Light Gray (N7); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
15	14-16	S3	1.4	19-34 50-28 (84)	Same as S2; Gravel is Well Rounded	BG, 3.2, 0.4 ppm Dye Test - Neg.
20	19-21	S4	1.5	12-18 20-20 (38)	Same as S2; Slightly Moist	BG, 7.0 ppm, BG Dye Test - Neg.
25	24-26	S5	1.3	10-12 12-18 (24)	Poorly Graded Sand with Gravel (SP); Moderate Brown (5YR3/4); Wet; Medium Dense	BG, BG, BG Dye Test - Neg. Water Table ~26 ft BGS
30	29-31	S6	1.5	14-18 18-20 (36)	Poorly Graded Sand and Gravel (SP); Pale Brown (5YR5/2); Wet; Dense	BG, BG, BG Dye Test - Neg.
						Backfilled with Grout 0-31 ft

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-2
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/18/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.20 MSL	Page Number	1 of 1
Water Level & Date	~28 ft BGS 10/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data, Dye Test, Wtr Depth
5	4-6	S1	1.7	15-25 27-30 (52)	Poorly Graded Gravel with Sand (GP); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, BG Dye Test - Neg.
10	9-11	S2	1.3	15-14 13-16 (27)	Poorly Graded Sand with Gravel (SP); Light Brownish Gray (5YR6/1); Slightly Moist; Medium Dense	BG, BG, BG Dye Test - Neg.
15	14-16	S3	1.3	20-20 20-18 (40)	Poorly Graded Sand and Gravel (SP) with a 2" Clay Pan Layer at 14.5' (5YR6/1), Clay was (10YR6/6); Dense; Moist	BG, 1.0 ppm, BG Dye Test - Neg.
20	19-21	S4	1.4	18-17 13-12 (30)	Poorly Graded Gravel with Sand and Clay (GP-GM); Pale Brown (5YR5/2); Medium Dense; Wet	BG, 2.5 ppm, BG Dye Test - Neg.
25	24-26	S5	1.9	15-20 32-33 (52)	Sandy, Silty, Clay with Gravel (CL-ML); Pale Yellowish Brown to Pale Brown (10YR6/2) to (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
30	29-31	S6	2.0	20-30 27-38 (57)	Poorly Graded Sand with Silt (SW-SM) Pale Brown (5YR6/2); Wet; Very Dense	Water Table ~28 ft BGS BG, BG, BG Dye Test - Neg.
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb2.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-3
Location	Dayton, Ohio	Date Started	10/19/94
Client	Chrysler Corporation	Date Completed	10/19/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	750.14 ft MSL	Page Number	1 of 1
Water Level & Date	~25 ft BGS 10/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, Wtr Depth
5	4-6	S1	0.9	12-6 8-10 (14)	Silty Sand with Gravel (SM); Light Gray (N7); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
10	9-11	S2	1.6	20-14 9-11 (23)	Top .5 ft same as S1; Bottom 1.1 ft Silty Gravel (GM); Light Gray (N6); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
15	14-16	S3	1.5	22-25 20-15 (45)	Poorly Graded Sand with Silt (SP-SM) Very Light Gray (N8); Dry; Very Dense	BG, BG, 10.0 ppm Dye Test - Neg.
20	19-21	S4	1.6	19-25 20-23 (45)	Same as S3	BG, 0.5, 2.0 ppm Dye Test - Neg.
25	24-26	S5	1.8	20-25 23-27 (48)	Poorly Graded Sand with Silt and Gravel (SP-SM); Medium Dark Gray (N4); Wet; Dense	BG, BG, 3.0 ppm Dye Test - Neg. Water Table ~25 BGS
30	29-31	S6	2.0	25-27 35-34 (62)	Top 1 ft Poorly Graded Sand (SP); Bottom 1 ft Poorly Graded Sand with Silt (SP-SM); Medium Dark Gray (N4); Wet; Very Dense	BG, BG, 1.5 ppm Dye Test - Neg.
						Backfilled with Grout 0-31 ft

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-4
Location	Dayton, Ohio	Date Started	10/29/94
Client	Chrysler Corporation	Date Completed	10/31/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	749.87 MSL	Page Number	1 of 1
Water Level & Date	~25 ft BGS 10/31/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.2	12-13 17-20 (30)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.5	14-22 21-18 (43)	Same as S1	BG, BG, 1.0 ppm Dye Test - Neg.
15	14-16	S3	1.0	5-5 5-9 (10)	Well Graded Gravel with Clay (GW-GC) Brownish Gray (5YR4/1); Wet; Loose	BG, BG, 2.0 ppm Dye Test - Neg.
20	19-21	S4	1.2	7-7 8-11 (15)	Same as S3 with a small band of orange staining ~6" from the bottom of the spoon	BG, BG, 1.0 ppm Dye Test - Neg.
25	24-26	S5	1.6	16-25 35-43 (60)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 2.0 ppm Dye Test - Neg. Water Table ~25 ft BGS
30	29-31	S6		22-18 15-16 (33)	Well Graded Gravel with Sand and Clay (GW-GC); Brownish Gray (5YR 4/1); Wet; Dense	BG, BG, 2.0 ppm Dye Test - Neg.
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb4.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-5
Location	Dayton, Ohio	Date Started	10/19/94
Client	Chrysler Corporation	Date Completed	10/19/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.20 MSL	Page Number	1 of 1
Water Level & Date	~26 ft BGS 10/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.5	20-25 30-38 (55)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, 0.4 ppm, BG Dye Test - Neg.
10	9-11	S2	1.6	10-10 12-15 (22)	Poorly Graded Sand with Gravel (SP); Moderate Brown (5YR4/4); Moist; Medium Dense	BG, BG, 2.0 ppm Dye Test - Neg.
15	14-16	S3	1.7	15-15 20-20 (35)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (5YR6/1); Moist; Dense	BG, BG, 9.0 ppm Dye Test - Neg.
20	19-21	S4	1.8	45-70 33-33 (103)	Same as S3; Very Dense	BG, BG, 10.0 ppm Dye Test - Neg.
25	24-26	S5	1.9	50-50 55-27 (105)	Well Graded Gravel with Sand (GW); Moderate Brown (5YR4/4); Wet; Very Dense	BG, 1.5, 8.0 ppm Dye Test - Neg.
30	29-31	S6	1.2	35-50 45-35 (95)	Same as S5	BG, 5.0,10.0 ppm Dye Test - Pos. Water Table ~25 ft BGS
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb5.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-6
Location	Dayton, Ohio	Date Started	10/20/94
Client	Chrysler Corporation	Date Completed	10/20/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.01 MSL	Page Number	1 of 1
Water Level & Date	~25 ft BGS 10/20/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, Wtr Depth
5	4-6	S1	1.2	15-26 32-30 (58)	Well Graded Sand with Silt, Clay and Gravel (SW-SC); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.4	18-18 20-28 (38)	Same as S1; Dense	BG, BG, 2.0 ppm Dye Test - Neg.
15	14-16	S3	0.8	13-8 7-9 (15)	Well Graded Gravel with Sand and Silt (GW-GM); Grayish Brown (5YR 5/2); Dry; Medium Dense	BG, BG, 4.0 ppm Dye Test - Neg.
20	19-21	S4	1.8	18-22 18-17 (40)	Same as S3; Dense	BG, 0.5, 2.5 ppm Dye Test - Neg.
25	24-26	S5	1.7	20-18 18-20 (36)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Dense; Orange Staining	BG, 3.0, 1.5 ppm Dye Test - Neg. Water Table ~25 ft BGS
30	29-31	S6	1.8	26-24 24-28 (48)	Well Graded Gravel with Sand, Silt, and Some Clay (GW-GM); Brownish Gray (5YR4/1); Wet; Dense	BG, BG, BG Dye Test - Neg.
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb6.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-7
Location	Dayton, Ohio	Date Started	10/20/94
Client	Chrysler Corporation	Date Completed	10/20/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.41 MSL	Page Number	1 of 1
Water Level & Date	~25 ft BGS 10/20/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.4	23-43 50-45 (93)	Well Graded Sand with Silt and Gravel (SW-SM); Light Gray (N7) to Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.5	9-12 14-14 (26)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Moist; Medium Dense	BG, BG, 1.5 ppm Dye Test - Neg.
15	14-16	S3	1.9	10-15 17-25 (32)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (N7); Moist; Dense	BG, 3.0,10.0 ppm Dye Test - Neg.
20	19-21	S4	1.5	30-33 27-25 (60)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Moist; Very Dense	BG, 4.0, 2.0 ppm Dye Test - Neg.
25	24-26	S5	1.8	25-22 20-25 (42)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Wet; Dense	BG, BG, 4.5 ppm Dye Test - Neg. Water Table ~25 ft BGS
30	29-31	S6	1.8	30-27 25-25 (52)	Poorly Graded Sand with Silt and Gravel (SP-SM); Brownish Gray (5YR 4/1); Wet; Very Dense	BG, 3.0, 3.0 ppm Dye Test - Neg.
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb7.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-8
Location	Dayton, Ohio	Date Started	10/19/94
Client	Chrysler Corporation	Date Completed	10/19/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.34 MSL	Page Number	1 of 1
Water Level & Date	~25 ft BGS 10/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, Wtr Depth
5	4-6	S1	1.0	12-32 34-33 (66)	Well Graded Sand with Silt (SW-SM); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 1.0 ppm Dye Test - Neg.
10	9-11	S2	1.3	12-17 18-20 (35)	Well Graded Sand with Gravel (SM); Brownish Gray (5YR4/1); Moist; Dense	BG, BG, 4.0 ppm Dye Test - Neg.
15	14-16	S3	1.3	20-25 25-23 (50)	Same as S2; Very Dense	BG, 0.5,1.0 ppm Dye Test - Neg.
20	19-21	S4	2.0	20-22 25-40 (47)	Clay with Gravel (CH); Brownish Gray (5YR4/1) to Light Brown (5YR5/6) Moist; Dense	BG, BG, BG Dye Test - Neg.
25	24-26	S5	1.5	12-18 19-25 (37)	Poorly Graded Sand with Gravel (SP); Moderate Brown (5YR4/4); Wet; Dense	BG, 0.5,8.0 ppm Dye Test - Neg. Water Table ~25 ft BGS
30	29-31	S6	2.0	16-19 19-20 (38)	Top foot Poorly Graded Sand (SP); Bottom foot Well Graded Sand (SW); Brownish Gray (5YR3/2); Wet; Dense	BG, 9.0,1.0 ppm Dye Test - Neg.
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb8.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-9
Location	Dayton, Ohio	Date Started	10/21/94
Client	Chrysler Corporation	Date Completed	10/21/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	750.59 MSL	Page Number	1 of 1
Water Level & Date	~26 ft BGS 10/21/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.0	2-4 6-7 (10)	Clay with Gravel (CH); Brownish Gray (5YR4/1); Moist; Loose	BG, BG, BG Dye Test - Neg.
10	9-11	S2	0.7	6-5 5-5 (10)	Well Graded Gravel with Sand (GP); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
15	14-16	S3	1.3	7-9 11-16 (20)	Same as S2; Wet	BG, BG, 1.0 ppm Dye Test - Neg.
20	19-21	S4	2.0	20-35 28-30 (63)	Poorly Graded Sand with Gravel (SP); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, 1.0,15.0 ppm Dye Test - Pos.
25	24-26	S5	1.6	23-30 30-35 (60)	Poorly Graded Sand with Gravel (SP); Medium Dark Gray (N4); Wet; Very Dense	BG, BG, 8.0 ppm Dye Test - Neg. Water Table ~26 ft BGS
30	29-31	S6			No Sample Collected	
						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb9.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	SB-10
Location	Dayton, Ohio	Date Started	10/21/94
Client	Chrysler Corporation	Date Completed	10/21/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.33 MSL	Page Number	1 of 1
Water Level & Date	~27 ft BGS 10/21/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.3	13-16 17-20 (33)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 1.0 ppm Dye Test - Neg.
10	9-11	S2	2.0	35-40 22-20 (62)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
15	14-16	S3	1.8	33-21 17-21 (38)	Same as S2; Larger Gravel	BG, BG, BG Dye Test - Neg.
20	19-21	S4	1.8	13-18 20-28 (38)	Clay with Gravel and Sand (CH); Brownish Gray (5YR4/1); Moist; Dense	BG, BG, BG Dye Test - Neg.
25	24-26	S5	1.9	15-22 24-45 (46)	Same as S4; Wet	BG, BG, BG Dye Test - Neg. Water Table ~27 ft BGS
30	29-31	S6	2.0	15-15 18-20 (33)	Well Graded Gravel with Clay and Sand (GW-GC); Moderate Brown (5YR 4/4); Wet; Dense	BG, 1.0,15 ppm Dye Test - Neg.
						Backfilled with Grout 0-31 ft

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

ATTACHMENT G

Quality Control Procedures for Soil Samples

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

Quality Control Procedures for Soil Samples

Chrysler Corporation

Dayton Thermal Products Plant

Chemical Analysis

- Sample collection was done using new disposable latex gloves, laboratory prepared glassware, and thorough decontamination of the split spoon samplers. Decontamination of the split spoon samplers was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was then rinsed using deionized water, and a solution of 10% methanol and deionized water. The equipment was then allowed to air dry;
- Samples were labeled to show project name, boring number, depth interval, date, analysis requested, and the sampler's initials;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- Two soil sample duplicates were collected (ten percent duplicates);
- One equipment blank was collected (one per round of sampling);
- One matrix spike sample and one matrix spike duplicate sample were analyzed (one per round of sampling);
- The samples were shipped and received at the laboratory within the EPA standard holding times for each analysis.

Geotechnical Analysis

- Sample collection was completed using new disposable latex gloves, clean glassware, and thorough decontamination of the split spoon samplers. Decontamination of the split spoon samplers was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was rinsed using deionized water, and a solution of 10% methanol and deionized water. The equipment was then allowed to air dry;
- Samples were labeled to show project name, boring number, depth interval, date, analysis requested, and the sampler's initials.

ATTACHMENT I

Groundwater Monitoring Well Logs

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA1
Location	Dayton, Ohio	Date Started	11/14/94
Client	Chrysler Corporation	Date Completed	11/14/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.43 MSL	Page Number	1 of 2
Water Level & Date	26.2 ft BGS 11/17/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.1	14-16 20-21 (36)	Well Graded Gravel with Sand (GW); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.2	23-29 18-18 (47)	Same as S1	BG, BG, 4.0 ppm Dye Test - Neg.
15	14-16	S3	1.4	24-25 23-25 (48)	Same as S2	BG, 10, 5 ppm Dye Test - Neg.
20	19-21	S4	1.3	25-30 23-20 (53)	Same as S3; Very Dense	BG, 3, 10 ppm Dye Test - Neg.
25	24-26	S5	1.6	20-25 26-33 (51)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Very Dense	BG, 3, 10 ppm Dye Test - Neg.
30	29-31	S6	1.8	38-25 25-30 (50)	Well Graded Gravel with Sand (GW); Brownish gray (5YR4/1); Wet; Very dense	BG, 6, 6 ppm Dye Test - Neg.
35	34-36	S7	1.8	23-24 35-35 (59)	Top 1 ft same as S6; Bottom 0.8 ft Well Graded Sand (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 40, 15 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA1
Location	Dayton, Ohio	Date Started	11/14/94
Client	Chrysler Corporation	Date Completed	11/14/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.43 MSL	Page Number	2 of 2
Water Level & Date	26.2 ft BGS 11/17/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	1.9	27-38 40-44 (78)	Top 0.5 ft Well Graded Sand (SW); Bottom 1.4 ft Well Graded Gravel (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 10, 7 ppm Dye Test - Neg. Well Construction Total Depth 39 Screen 29-39 Sand 26.5-39 Bent. 23.8-26.5 Grout 0-23.8 Riser 0-29 Screen is 10 Slot Screen & Riser 2"PVC

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA2
Location	Dayton, Ohio	Date Started	10/28/94
Client	Chrysler Corporation	Date Completed	10/28/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	749.45 MSL	Page Number	1 of 2
Water Level & Date	24.2 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 5	4-6	S1	1.1	21-25 24-25 (49)	Poorly Graded Gravel with Silt (GP-GM); Light Brownish Gray (5YR 6/1); Dry; Dense	_ BG, BG, BG, Dye Test - Neg.
_ 10	9-11	S2	1.0	25-26 22-21 (48)	Same as S1	_ BG, BG, 1.5 ppm Dye Test - Neg.
_ 15	14-16	S3	1.5	11-19 26-26 (45)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR 4/1); Dry; Dense	_ BG, BG, 10 ppm Dye Test - Neg.
_ 20	19-21	S4	1.3	17-24 24-22 (48)	Well Graded Sand with Silt and Gravel (SW-SM); Brownish Gray (5YR 4/1); Dry; Dense	_ BG, 20, 12 ppm Dye Test - Neg.
_ 25	24-26	S5	1.6	14-19 21-28 (40)	Well Graded Sand with Gravel (SW) Brownish Gray (5YR4/1); Wet; Dense	_ BG, 10, 4 ppm Dye Test - Neg.
_ 30	29-31	S6	1.8	19-22 19-23 (41)	Well Graded Gravel (GW); Brownish Gray (5YR4/1); Wet; Dense	_ 1, 17, 5 ppm Dye Test - Neg.
_ 35	34-36	S7	2.0	27-29 51-61 (80)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	_ BG, BG, 4 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA2
Location	Dayton, Ohio	Date Started	10/28/94
Client	Chrysler Corporation	Date Completed	10/28/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	749.45 MSL	Page Number	2 of 2
Water Level & Date	24.2 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	22-25 29-41 (54)	Well Graded Gravel with Sand and Clay (GW-GC); Brownish Black (5YR 2/1); Wet; Very Dense	1, 4, 4 ppm Dye Test - Neg. Well Construction Total Depth 40 Screen 30-40 Sand 27-40 Bent. 23.5-27 Grout 0-23.5 Riser 0-30 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH

chrysa22.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA3
Location	Dayton, Ohio	Date Started	11/11/94
Client	Chrysler Corporation	Date Completed	11/11/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.19 MSL	Page Number	1 of 2
Water Level & Date	26.8 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.6	12-12 15-15 (27)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.2	10-7 5-10 (12)	Same as S1	BG, BG, BG Dye Test - Neg.
15	14-16	S3	0.8	7-5 4-7 (9)	Same as S2; Loose	BG, BG, BG Dye Test - Neg.
20	19-21	S4	1.8	75-25 27-32 (52)	Clay with Gravel (CH); Moderate Yellowish Brown (10YR5/3); Dry; Very Dense	BG, BG, 2 ppm Dye Test - Neg.
25	24-26	S5	1.6	17-20 23-30 (43)	Well Graded Sand (SW); Pale Yellowish Brown (10YR6/2); Dry; Dense	BG, BG, 12 ppm Dye Test - Neg.
30	29-31	S6	1.8	27-22 33-40 (55)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 70 ppm Dye Test - Neg.
35	34-36	S7	1.9	35-30 28-35 (58)	Same as S6; Orange Staining	BG, BG, 70 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA3
Location	Dayton, Ohio	Date Started	11/11/94
Client	Chrysler Corporation	Date Completed	11/11/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.19 MSL	Page Number	2 of 2
Water Level & Date	26.8 ft bgs 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	1.8	35-45 60-60 (105)	Well Graded Gravel with Sand and Some Clay (GW); Brownish Gray (5YR 4/1); Wet; Very Dense	BG, BG, 5 ppm Dye Test - Neg. Well Construction Total Depth 39 Screen 29-39 Sand 27-29 Bent. 25-27 Grout 0-25 Riser 0- 29 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chrysa32.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA4
Location	Dayton, Ohio	Date Started	10/24/94
Client	Chrysler Corporation	Date Completed	10/24/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.27 ft MSL	Page Number	1 of 2
Water Level & Date	25.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	0.8	8-13 10-12 (23)	Well Graded Sand with Gravel and Silt (SW-SM); Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
10	9-11	S2	1.3	12-14 30-33 (44)	Same as S1; Dense; Larger Grains	BG, BG, 1.5 ppm Dye Test - Neg.
15	14-16	S3	1.5	18-18 15-15 (33)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
20	19-21	S4	1.7	45-90 60-90 (150)	Well Graded Gravel with Sand and Clay (GW-GC); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 50 ppm Dye Test - Neg.
25	24-26	S5	1.9	14-16 21-25 (37)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Dense	BG, 8, 75 ppm Dye Test - Pos.
30	29-31	S6	2.0	13-10 25-29 (35)	Poorly Graded Sand with Gravel (SP); Brownish Black (5YR2/1); Wet; Dense	BG, 13, 80 ppm Dye Test - Neg.
35	34-36	S7	2.0	22-23 30-30 (53)	Same as S6; Very Dense	BG, 40, 80 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA4
Location	Dayton, Ohio	Date Started	10/24/94
Client	Chrysler Corporation	Date Completed	10/24/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.27 ft MSL	Page Number	2 of 2
Water Level & Date	25.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	35-40 45-75 (85)	Poorly Graded Sand with Silt (SW-SM) Brownish Black (5YR2/1); Wet; Very Dense	BG, 20, 100 ppm Dye Test - Neg.
45	44-46	S9	2.0	50-52 70 (122)	Same as S8	2, 40, 60 ppm Dye Test - Neg.
						Well Construction Total Depth 45 Screen 35-45 Sand 32.5-45 Bent. 28.7-32.5 Grout 0-28.7 Riser 0-35 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chrya42.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA5
Location	Dayton, Ohio	Date Started	11/15/94
Client	Chrysler Corporation	Date Completed	11/15/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.25 ft MSL	Page Number	1 of 2
Water Level & Date	26 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.3	10-11 14-21 (25)	Well Graded Gravel with Silt and Clay (GW-GC); Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, 1 ppm Dye Test - Neg.
10	9-11	S2	1.2	11-12 25-30 (37)	Well Graded Gravel with Silt (GW-GM); Light Brownish Gray (5YR 6/1); Dry; Dense	BG, BG, 3 ppm Dye Test - Neg.
15	14-16	S3	1.2	20-19 15-20 (34)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Dense; Dry	BG, BG, 3 ppm Dye Test - Neg.
20	19-21	S4	1.0	20-55 44-40 (99)	Well Graded Gravel with Clay (GW-GC) Grayish Brown (5YR3/2); Moist; Very Dense	BG, BG, 4 ppm Dye Test - Neg.
25	24-26	S5	1.5	34-60 40-40 (100)	Well Graded Gravel with Sand and Clay (GW-GC) Grayish Brown (5YR3/2) Wet; Dense	BG, BG, 4 ppm Dye Test - Neg.
30	29-31	S6	1.7	18-22 24-25 (46)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dense; Wet	BG, BG, 6 ppm Dye Test - Neg.
35	34-36	S7	2.0	21-23 23-25 (46)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dense; Wet	BG, BG, 5 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA5
Location	Dayton, Ohio	Date Started	11/15/94
Client	Chrysler Corporation	Date Completed	11/15/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.25 ft MSL	Page Number	2 of 2
Water Level & Date	26 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	25-19 40-7 (59)	Top foot same as S7; Bottom foot Poorly Sorted Sand (SP); Dark Yellowish Brown (10YR4/2); Dense; Wet	BG, BG, 6 ppm Dye Test - Neg. Well Construction Total Depth 39 Screen 29-39 Sand 27-39 Bent. 24.5-27 Grout 0-24.5 Riser 0-29 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH

chrya52.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA6
Location	Dayton, Ohio	Date Started	10/25/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.75 ft MSL	Page Number	1 of 2
Water Level & Date	26.5 ft BGS 11/17/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.2	8-9 11-14 (20)	Gravelly Clay with Sand (CH); Dark reddish brown (10YR2/2); Moist; Dense	BG, BG, BG, Dye Test - Neg.
10	9-11	S2	1.3	10-15 17-16 (32)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 3 ppm Dye Test - Neg.
15	14-16	S3	1.8	22-25 25-56 (50)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 1 ppm Dye Test - Neg.
20	19-21	S4	1.0	7-13 17-27 (30)	Same as S3; Moist; Dense	BG, BG, BG Dye Test - Neg.
25	24-26	S5	1.8	9-9 11-12 (20)	Well Graded Sand (SW); Brownish Gray (5YR4/1); Moist; Medium Dense	BG, BG, 3 ppm
30	29-31	S6	2.0	17-25 30-40 (55)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 4 ppm Dye Test - Neg.
35	34-36	S7	2.0	22-18 18-30 (36)	Well Graded Gravel with Sand (GW); Brownish Black (5YR2/1); Wet; Dense	BG, BG, 4 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWA6
Location	Dayton, Ohio	Date Started	10/25/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.75 ft MSL	Page Number	2 of 2
Water Level & Date	26.5 ft BGS 11/17/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	15-15 20-22 (35)	Same as S7; Wet	BG, BG, 5 ppm Dye Test - Neg. Well Construction Total Depth 40 Screen 30-40 Sand 27.5-40 Bent. 24-27.5 Grout 0-24 Riser 0-30 Screen is 10 Slot Screen & Riser 2" PVC

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB1
Location	Dayton, Ohio	Date Started	10/27/94
Client	Chrysler Corporation	Date Completed	10/28/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	744.93 ft MSL	Page Number	1 of 3
Water Level & Date	19.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.1	2-2 4-5 (6)	Clay with gravel (CH); Dark Gray (N3); Moist; Firm	BG, BG, BG Dye Test - Neg.
10	9-11	S2	1.4	6-6 10-13 (16)	Well graded gravel and sand (GW); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 0.2 ppm Dye Test - Neg.
15	14-16	S3	1.9	20-30 18-18 (48)	Well Graded Gravel with Sand and Clay (GW-GC); Moderate Reddish Brown (10YR4/6); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
20	19-21	S4	1.5	18-16 12-17 (28)	Well Graded Gravel (GW); Grayish Brown (5YR3/2); Medium Dense; Wet	BG, BG, 0.2 ppm Dye Test - Neg.
25	24-26	S5	2.0	30-30 30-40 (60)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Very Dense; Wet	BG, BG, BG Dye Test - Neg.
30	29-31	S6	1.9	20-18 18-25 (36)	Well Graded Gravel (GW); Grayish Brown (5YR3/2); Medium Dense; Wet	BG, BG, BG Dye Test - Neg.
35	34-36	S7	2.0	30-25 28-35 (53)	Top foot same as S6; Bottom foot Well Graded Gravel with Clay(GW-GC); Moderate Yellowish Brown (10YR4/2); Very Dense; Wet	BG, BG, BG Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB1
Location	Dayton, Ohio	Date Started	10/27/94
Client	Chrysler Corporation	Date Completed	10/28/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	744.93 ft MSL	Page Number	2 of 3
Water Level & Date	19.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	22-23 20-23 (43)	Well Graded Gravel (GW); Moderate Brown (5YR4/4); Medium Dense; Wet	BG, BG, BG Dye Test - Neg.
45	44-46	S9	1.4	17-48 28-18 (76)	Same as S8 with a 1 Inch Layer of Poorly Graded Sand at the Sample Bottom (SP); Brownish Black (5YR 2/1); Very Dense	BG, BG, BG Dye Test - Neg.
50	49-51	S10	2.0	37-31 42-78 (73)	Poorly Graded Sand (SP); Medium Dark Gray (N4); Very Dense; Wet	BG, BG, BG Dye Test - Neg.
55	54-56	S11	2.0	27-19 30-4 (49)	Well Graded Gravel with Sand (GW); Dark Gray (N3); Wet; Dense	BG, BG, BG Dye Test - Neg.
60	59-61	S12	2.0	36-28 34-38 (62)	Same as S11; Very Dense	BG, BG, BG Dye Test - Neg.
65	64-66	S13	2.0	35-46 40-40 (86)	Top foot same as S12; Bottom foot Well Graded Gravel with Dense Clay (GW-GC); Dark Gray (N3); Wet; Very Dense	BG, BG, Bg Dye Test - Neg.
70	69-71	S14	2.0	31-42 45-46 (87)	Same as S13	BG, BG, BG Dye Test - Pos. Oil from Clay Suspected Source

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB1
Location	Dayton, Ohio	Date Started	10/27/94
Client	Chrysler Corporation	Date Completed	10/28/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	744.93 ft MSL	Page Number	3 of 3
Water Level & Date	19.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	74-76	S15	2.0	44-140 (188)	Clay (CH); Greenish Gray (5GY6/1); Hard	BG, BG, BG Dye Test - Neg. Well Construction Total Depth 74 Screen 64-74 Sand 61-74 Bent. 58-61 Grout 0-58 Riser 0-64 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH

chryb13.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB2
Location	Dayton, Ohio	Date Started	11/16/94
Client	Chrysler Corporation	Date Completed	11/17/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.62 ft MSL	Page Number	1 of 3
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.2	10-17 18-17 (35)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, BG, 1 ppm Dye Test - Neg.
10	9-11	S2	1.3	35-33 30-30 (63)	Same as S1; Some Silt; Very Dense	BG, BG, 2 ppm Dye Test - Neg.
15	14-16	S3	1.5	11-18 19-18 (37)	Same as S2; Larger Grains; Moist	BG, BG, 2 ppm Dye Test - Neg.
20	19-21	S4	0.6	55-50/1"	Same as S3; Moist	BG, BG, 3 ppm Dye Test - Neg.
25	24-26	S5	1.8	35-35 38-43 (73)	Top 0.5 ft same as S4; Bottom 1.3 ft Poorly Graded Sand (SP); Brownish Gray (5YR4/1); Dry; Very Dense	BG, 1, 7 ppm Dye Test - Neg.
30	29-31	S6	1.9	27-33 36-35 (69)	Well Graded Gravel (GW); Grayish Brown (5YR3/2); Wet; Very Dense; Orange Staining	BG, BG, 1 ppm Dye Test - Neg.
35	34-36	S7	1.9	31-20 19-25 (39)	Well Graded Sand with Gravel (SW); Grayish Brown (5YR3/2); Wet; Dense	BG, BG, 0.5 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB2
Location	Dayton, Ohio	Date Started	11/16/94
Client	Chrysler Corporation	Date Completed	11/17/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.62 ft MSL	Page Number	2 of 3
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	20-21 18-25 (39)	Top 1.5 ft same as S7; Bottom 0.5 ft Well Graded Gravel with Sand and Clay (GW-GC); Pale Yellowish Brown (10YR6/2); Wet; Dense	BG, 2 ppm, BG Dye Test - Neg.
45	44-46	S9	2.0	25-25 30-33 (55)	Same as bottom 0.5 foot of S8	BG, BG, BG Dye Test - Neg.
50	49-51	S10	2.0	25-27 30-30 (57)	Same as S9	BG, BG, BG Dye Test - Neg.
55	54-56	S11	2.0	25-28 25-30 (53)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
60	59-61	S12	2.0	30-32 40-75 (72)	Poorly Graded Sand (SP); Brownish Black (5YR2/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
65	64-66	S13	2.0	35-45 32-40 (77)	Well Graded Gravel with Sand and Some Clay (SW); Brownish Black (5YR 2/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
70	69-71	S14	2.0	35-34 40-44 (74)	Same as S13	BG, BG, BG Dye Test - Pos.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB2
Location	Dayton, Ohio	Date Started	11/16/94
Client	Chrysler Corporation	Date Completed	11/17/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.62 ft MSL	Page Number	3 of 3
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	74-76	S15	2.0	47-38 50-66 (88)	Same as S14	BG, BG, BG Dye Test - Pos.
80	79-81	S16	2.0	40-42 53-100 (95)	Same as S15	BG, BG, BG Dye Test - Pos.
85	84-86	S17	2.0	55-66 68 (134)	Poorly Graded Sand (SP); Dark Gray (N3); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
90	89-91	S18	2.0	25-37 74-238 (111)	Clay with Gravel (CH); Olive Gray (5Y4/1); Very Hard	BG, BG, BG Dye Test - Pos.
						Well Construction Total Depth 89 Screen 79-89 Sand 76.4-89 Bent. 70-76.4 Grout 0-70 Riser 0-79 Screen is 10 Slot Screen & Riser 2" PVC

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB3
Location	Dayton, Ohio	Date Started	11/3/94
Client	Chrysler Corporation	Date Completed	11/4/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.13 ft MSL	Page Number	1 of 2
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	0.9	27-18 18-22 (36)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 0.2 ppm Dye Test - Neg.
10	9-11	S2	1.2	25-20 14-13 (34)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
15	14-16	S3	1.6	15-17 28-18 (45)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
20	19-21	S4	1.8	12-30 37-35 (67)	Top 0.5 ft same as S3; Bottom 1.3 ft Clay with gravel (CH); Dark Greenish Gray (5GY4/1); Moist; Hard; Orange Staining	BG, BG, 2 ppm Dye Test - Neg.
25	24-26	S5	2.0	27-30 27-22 (57)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Moist; Very Dense; Orange Staining	BG, BG, 5 ppm Dye Test - Neg.
30	29-31	S6	1.7	17-21 28-27 (49)	Same as S5; Wet; Dense	BG, BG, 8 ppm Dye Test - Neg.
35	34-36	S7	2.0	41-47 37-36 (84)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 15 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB3
Location	Dayton, Ohio	Date Started	11/3/94
Client	Chrysler Corporation	Date Completed	11/4/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	752.13 ft MSL	Page Number	2 of 2
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	1.8	20-30 27-35 (57)	Same as S7; More Gravel	BG, BG, 5 ppm Dye Test - Pos.
45	44-46	S9	1.8	40-40 50-60 (90)	Same as S8	BG, BG, 20 ppm Dye Test - Neg.
50	49-51	S10	1.2	32-30 34-35 (64)	Same as S9	BG, 0.4, 5 ppm Dye Test - Neg.
55	54-56	S11	1.2	22-20 30-34 (50)	Top 0.5 ft Sandy Clay (CH); Moderate Yellowish Brown (10YR5/4); Bottom 0.7 ft Clay (CH); Light Olive Gray (5Y6/1); Wet; Hard	BG, BG, 2 ppm Dye Test - Pos.
60	59-61	S12	1.0	15-30 30-45 (60)	Clay (CH); Olive Gray (5Y4/1); Moist; Very Hard	BG, 10 ppm, BG Dye Test - Neg.
						Well Construction Total Depth 60 Screen 46-56 Sand 43-60 Bent. 38-43 Grout 0-38 Riser 0-46 Screen is 10 Slot Screen & Riser 2"PVC

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N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project Chrysler Dayton Thermal Products
Location Dayton, Ohio
Client Chrysler Corporation
Driller Moody's of Dayton
Elevation 751.64 ft MSL
Water Level & Date 26.9 ft BGS 11/19/94

Boring Number MWB4
Date Started 10/31/94
Date Completed 11/2/94
Drilling Method 6.25" HSA, CME 75
Page Number 1 of 3
Logged By Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.0	8-10 15-18 (25)	Well Graded Gravel with Silt and Clay (GW-GM); Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
10	9-11	S2	0.9	10-13 26-30 (39)	Same as S1	BG, BG, BG Dye Test - Neg.
15	14-16	S3	0.8	20-20 18-18 (38)	Same as S2	BG, BG, 0.5 ppm Dye Test - Neg.
20	19-21	S4	2.0	37-25 25-30 (50)	Well Graded Sand with Silt and Gravel (SW-SM); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 1 ppm Dye Test - Neg.
25	24-26	S5	0.5	--	Same as S4; Very Dense	BG, BG, 1 ppm Dye Test - Neg.
30	29-31	S6	2.0	20-28 31-40 (59)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
35	34-36	S7	2.0	34-52 48-53 (100)	Well Graded Gravel with Clay (GW-GC) Pale Brown (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB4
Location	Dayton, Ohio	Date Started	10/31/94
Client	Chrysler Corporation	Date Completed	11/2/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.64 ft MSL	Page Number	2 of 3
Water Level & Date	26.9 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	26-31 43-44 (74)	Same as S7; Very Dense	BG, BG, BG Dye Test - Neg.
45	44-46	S9	2.0	43-42 42-56 (84)	Well Graded Gravel with Sand and Clay (GW-GC); Pale Brown (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
50	49-51	S10	2.0	34-35 44-48 (79)	Well Graded Sand with Clay (SW-SC); Pale Brown (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
55	54-56	S11	2.0	50-43 44-50 (87)	Well Graded Gravel with Clay (GW-GC) Pale Brown (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
60	59-61	S12	2.0	57-60 65-70 (125)	Same as S11	BG, BG, BG Dye Test - Neg.
65	64-66	S13	2.0	44-49 48-56 (97)	Same as S12	BG, BG, BG Dye Test - Neg.
70	69-71	S14	2.0	32-55 60-64 (115)	Same as S13	BG, BG, BG Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB4
Location	Dayton, Ohio	Date Started	10/31/94
Client	Chrysler Corporation	Date Completed	11/2/94
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75
Elevation	751.64 ft MSL	Page Number	3 of 3
Water Level & Date	26.9 ft BGS 11/19/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	74-76	S15	2.0	90-82 (172)	Same as S14	BG, BG, BG Dye Test - Neg.
					*Augers began walking at approximately 70-75 ft BGS and could not be advanced any further. The decision was made to screen the well at 25-35 ft BGS.	
						Well Construction Sand 54-74 Bent. 49-54 Sand 38-49 Bent. 36-38 Sand 35-36 Screen 25-35 Sand 22.8-35 Bent. 20.4-22.8 Grout 0-20.4 Riser 0-25 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chryb43.log

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB5
Location	Dayton, Ohio	Date Started	11/7/94
Client	Chrysler Corporation	Date Completed	11/8/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	750.73 ft MSL	Page Number	1 of 3
Water Level & Date	26.8 ft BGS 11/15/94	Logged By	Thompson

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.5	8-12 13-12 (25)	Sandy Clay (CL); Dark Reddish Brown (10YR3/4); Dry; Very Stiff	BG, BG, BG Dye Test - Neg.
10	9-11	S2	1.1	10-12 12-16 (24)	Well Graded Gravel with Silt (GW-GM) Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, 0.2 ppm Dye Test - Neg.
15	14-16	S3	0.7	18-57 (75)	Same as S2; Larger Gravel	BG, BG, BG Dye Test - Neg.
20	19-21	S4	1.1	43-50 50/3" (100)	Top 0.5 ft same as S3; Bottom 0.5 ft Well Graded Sand (SW); Dark Reddish Brown (10YR3/4); Dry; Very Dense	BG, 0.2ppm, BG Dye Test - Neg.
25	24-26	S5	1.7	33-22 24-30 (46)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
30	29-31	S6	1.8	22-22 22-26 (44)	Well Graded Sand (SW); Brownish Gray (5YR4/1); Wet; Dense	BG, BG, 0.2 ppm Dye Test - Neg.
35	34-36	S7	2.0	20-27 25-25 (52)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 0.2 ppm Dye Test - Neg.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB5
Location	Dayton, Ohio	Date Started	11/7/94
Client	Chrysler Corporation	Date Completed	11/8/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	750.73 ft MSL	Page Number	2 of 3
Water Level & Date	26.8 ft BGS 11/15/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	1.2	35-53 75 (128)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
45	44-46	S9	2.0	33-35 50-50 (85)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
50	49-51	S10	2.0	31-30 28-36 (58)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
55	54-56	S11	1.5	35-35 54-65 (89)	Same as S10; Larger Gravel	BG, BG, BG Dye Test - Pos.
60	59-61	S12	1.6	60-60 50-55 (110)	Same as S11	BG, BG, BG Dye Test - Pos.
65	64-66	S13	1.5	50-40 50-60 (90)	Same as S12; Some Clay	BG, BG, BG Dye Test - Pos.
70	69-71	S14	1.3	55-53 68-73 (121)	Same as S13	BG, BG, BG Dye Test - Pos.

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB5
Location	Dayton, Ohio	Date Started	11/7/94
Client	Chrysler Corporation	Date Completed	11/8/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	750.73 ft MSL	Page Number	3 of 3
Water Level & Date	26.8 ft BGS 11/15/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	74-76	S15	1.5	40-58 53-60 (111)	Same as S14	BG, BG, BG Dye Test - Pos.
80	79-81	S16	1.6	40-50 50-50 (100)	Same as S15	BG, BG, BG Dye Test - Pos.
85	84-86	S17	1.4	50-65 50-50 (115)	Same as S16	BG, BG, BG Dye Test - Pos.
90	89-91	S18	2.0	22-25 35-40 (60)	Top 1.5 ft Well Graded Sand with Clay (SW-SC); Dark Greenish Gray (5GY 4/1); Bottom 0.5 ft Clay (CH); Dark Greenish Gray (5GY4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
					Note: Positive Dye Tests Likely Result of Oil in Clay Units	Well Construction Total Depth 90 Screen 80-90 Sand 75.5-90 Bent. 70.5-75.5 Grout 0-70.5 Riser 0-80 Screen is 10 Slot Screen & Riser 2" PVC

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB6
Location	Dayton, Ohio	Date Started	11/9/94
Client	Chrysler Corporation	Date Completed	11/10/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.37 ft MSL	Page Number	1 of 2
Water Level & Date	25.9 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
5	4-6	S1	1.2	15-16 20-25 (36)	Well Graded Gravel with Silt and Sand (GW-GM); Pale Yellowish Brown (10YR6/2); Medium Dense	BG, BG, 0.5 ppm Dye Test - Neg.
10	9-11	S2	1.5	25-25 16-15 (41)	Well Graded Gravel with Sand (GW); Pale Yellowish Brown (10YR6/2); Dry; Medium Dense	BG, BG, 2 ppm Dye Test - Neg.
15	14-16	S3	1.4	10-11 11-12 (22)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Medium Dense	BG, BG, 1 ppm Dye Test - Neg.
20	19-21	S4	1.8	21-28 26-22 (54)	Well Graded Gravel with Sand and Silt (GW-GM); Brownish Gray (5YR 4/1); Dry; Very Dense	BG, BG, 5 ppm Dye Test - Neg.
25	24-26	S5	1.8	15-20 19-21 (39)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, 2, 14 ppm Dye Test - Neg.
30	29-31	S6	1.6	38-34 25-25 (59)	Well Graded Gravel with Sand and Some Clay (GW); Dark Yellowish Brown (10YR4/2); Wet; Very Dense	BG, 2, 8 ppm Dye Test - Neg.
35	34-36	S7	1.7	20-20 18-25 (38)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Medium Dense; Orange Staining	BG, 3, 5 ppm No Dye Test

N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWB6
Location	Dayton, Ohio	Date Started	11/9/94
Client	Chrysler Corporation	Date Completed	11/10/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.37 ft MSL	Page Number	2 of 2
Water Level & Date	25.9 ft BGS 11/18/94	Logged By	Thompson

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	1.4	26-25 40-50 (65)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 1, 5 ppm Dye Test - Pos.
45	44-46	S9	1.2	20-33 48-56 (81)	Clay with Gravel (CH); Olive Gray (5Y4/1); Moist; Very Dense	BG, 0.5, 2 ppm Dye Test - Pos.
50	49-51	S10	1.0	38-47 100 (147)	Well Graded Sand and Gravel with Some Clay (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 2 ppm, BG Dye Test - Neg.
55	54-56	S11	.8	31-23 27-58 (50)	Same as S10	BG, 1 ppm, BG Dye Test - Neg.
						Well Construction Total Depth 54 Bent. 47-54 Sand 46-47 Screen 36-46 Sand 34-46 Bent. 32-34 Grout 0-32 Screen is 10 Slot Screen & Riser 2" PVC

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N = Number Blows to Drive 2 " Spoon 24 " with 140 lb. Weight Falling 30 "
Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC1
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	745.00 ft MSL	Page Number	1 of 2
Water Level & Date	24.5 ft BGS 11/19/24	Logged By	Newsom

Depth BGS (ft)	Sample Int-erval	Type &No.	Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
10		NA	NA	NA	Well Graded Gravel and Medium to Coarse Grain Sand (GW-SW); Trace fine sand, silt, and clay. No Odor or Sheen.	BG, BG, BG
20		NA	NA	NA	Same as above	BG, BG, BG
30		NA	NA	NA	Same as above	BG, BG, BG
40		NA	NA	NA	Same as above	BG, BG, BG
50		NA	NA	NA	Same as above	BG, BG, BG
60		NA	NA	NA	Same as above	BG, BG, BG
70		NA	NA	NA	Same as above	BG, BG, BG
76					Soft to Firm Gray Silt and Clay with Medium to Fine Grain Sand, Trace Gravel (CL); No Odor or Sheen.	Soft Clay 76 ft Firm Clay 79 ft

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC1
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	745 ft MSL	Page Number	2 of 2
Water Level & Date	24.5 ft BGS 11/19/94	Logged By	Newsom

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
80	81-83	S1	1.0	NA	Silty Clay with Medium to Fine Grain Sand, Trace Gravel (CL); Medium to Light Gray (N5-N7)	- BG, BG, BG
90	83-96	NA	NA	NA	Same as S1, but with a Dark Oil Sheen in Bailed Water and Cuttings	- BG, BG, 5 ppm
	96-98	S2	1.1	NA	Fine to Coarse Grain Sand with Silt, Trace Gravel (SW); Dark Gray (N7)	- BG, BG, 0.6 ppm
100	104-106	S3	1.0	NA	Same as S2	- Dye Test - Neg.
110	110-112	S4	2.0	NA	Same as S3	- Dye Test - Neg.

Well Construction

Total Depth 112
Screen 102-112
Sand 100-112
Bent. 96-100
Grout 0-96
8" casing 0-81
Riser 0-102

Screen is 10 Slot
Screen & Riser
2" PVC

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC2
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	751.60 ft MSL	Page Number	1 of 3
Water Level & Date	30.2 ft BGS 11/19/24	Logged By	Newsom

Depth BGS (ft)	Sample Int-erval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
10		NA	NA	NA	Well Graded Gravel and Medium to Coarse Grain Sand (GW-SW); Trace Fine Sand, Silt, and Clay. No Odor or Sheen.	BG, BG, BG
20		NA	NA	NA	Same as above	BG, BG, BG
30		NA	NA	NA	Same as above	BG, BG, 3 ppm
40		NA	NA	NA	Same as above	- BG, BG, BG
50		NA	NA	NA	Same as above	- BG, BG, BG
60		NA	NA	NA	Same as above	- BG, BG, BG
70		NA	NA	NA	Same as above	- BG, BG, BG

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC2
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	751.60 ft MSL	Page Number	2 of 3
Water Level & Date	24.5 ft BGS 11/19/94	Logged By	Newsom

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
- 80		NA	NA	NA	Same as above	
	85-87	S1	1.0	NA	Silt and Clay with Trace Fine to Coarse Grain Sand (CL); Medium Gray (N5)	- BG, BG, 9 ppm
_ 90						
	87-102	NA	NA	NA	Same as S1 with a Dark Oil Sheen in Bailed Water and Cuttings	- BG, BG, BG
_ 100						
	107-109	S2	1.5	NA	Fine to Coarse Grain Sand, Silt, and Gravel, with Trace Clay (SW); Gray (N5)	- BG, BG, BG Dye Test - Neg.
_ 110	109-114	NA	NA	NA	Same as S2; No Trace Clay	- BG, BG, BG
	114-116	S3	2.0	NA	Fine to Coarse Grain Sand and Silt with Trace Gravel and Clay (SW)	- BG, BG, BG Dye Test - Neg.
_ 120	116-120	NA	NA	NA	Fine to Coarse Grain Sand, Silt, and Gravel (SW); Oil Sheen Noted in the Water and Cuttings	- BG, BG, 0.6 ppm
_	120-122	S4	2.0	NA	Same as S3	- BG, BG, BG Dye Test - Neg.
_						

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC2
Location	Dayton, Ohio	Date Started	10/18/94
Client	Chrysler Corporation	Date Completed	10/25/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	751.60 ft MSL	Page Number	3 of 3
Water Level & Date	24.5 ft BGS 11/19/94	Logged By	Newsom

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
						Well Construction Total Depth 122 Screen 112-122 Sand 110-122 Bent. 108-110 Grout 0-108 12" casing 0-75 8" casing 0-92 6" casing 0-93 Riser 0-112 Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH

chryc23.log

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC3
Location	Dayton, Ohio	Date Started	11/9/94
Client	Chrysler Corporation	Date Completed	11/17/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	752.15 ft MSL	Page Number	1 of 2
Water Level & Date	26.8 ft BGS 11/19/24	Logged By	Newsom

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
10		NA	NA	NA	Well Graded Gravel and Fine to Coarse Grain Sand with Silt (GW-SW); No Odor or Sheen.	BG, BG, BG
20	19	NA	NA	NA	Silty Clay with Sand and Gravel (CL); Medium Dark Gray (N4); Dark Brown Oil Sheen in Bailed Water & Cuttings	BG, BG, BG
30	26	NA	NA	NA	Well Graded Gravel with Fine to Coarse Grain Sand with Silt (GW); No Odor or Sheen.	BG, BG, BG
40		NA	NA	NA	Same as above	BG, BG, 0.4 ppm
50	57-59	S1	2.0	NA	Silt and Clay with Trace Fine Grain Sand (CL); Medium Gray (N5); No Odor or Sheen.	BG, BG, BG
60	59-69	NA	NA	NA	Same as S1	BG, BG, BG
70	70-72	S2	1.5	NA	Fine to Coarse Grain Sand and Gravel with Silt and Trace Clay (SW); Medium Gray (N5); No Odor or Sheen.	BG, BG, BG

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

GEOLOGIC LOG

Project	Chrysler Dayton Thermal Products	Boring Number	MWC3
Location	Dayton, Ohio	Date Started	11/9/94
Client	Chrysler Corporation	Date Completed	11/17/94
Driller	Moody's of Dayton	Drilling Method	Cable Tool BE22-W
Elevation	752.15 ft MSL	Page Number	2 of 2
Water Level & Date	26.8 ft BGS 11/19/94	Logged By	Newsom

Depth BGS (ft)	Sample Interval	Sample Type &No.	Sample Rec. (ft)	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	72-76	NA	NA	NA	Same as S2	BG, BG, BG - Dye Test - Neg.
	76-78	S3	2.0	NA	Same as S2	BG, BG, BG - Dye Test - Neg.
80	78-82	NA	NA	NA	Well Graded Gravel and Medium to Coarse Grain Sand, Silt, and Trace Clay (GW); Medium Gray (N5); No Odor or Sheen.	BG, BG, BG Dye Test - Neg.
	82-84	S4	2.0	NA	Fine to Coarse Grain Sand and Gravel with Silt and Trace Clay (SW); Medium Gray (N5); No Odor or Sheen.	- BG, BG, BG Dye Test - Neg.

Well Construction

Total Depth 84
Screen 74-84
Sand 72-84
Bent. 69-72
Grout 0-69
12" casing 0-57
8" casing 0-58.5
Riser 0-74

Screen is 10 Slot
Screen & Riser
2" PVC

CLEAN TECH chryc32.log

Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Bailed Sample Respectively.

ATTACHMENT L

Groundwater Sample Collection Procedures

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

General Procedures for Groundwater Sampling
Chrysler Corporation
Dayton Thermal Products Plant

- The well cover was unlocked and carefully removed to avoid introducing foreign material into the well. The well was immediately monitored for organic vapors during the first groundwater sampling round using a PID. Wells having PID readings above the ambient air background level were allowed to vent until levels reached background before proceeding with purging;
- The static water level (SWL) was determined using an interface probe. The presence of any LNAPL was determined. The SWL was recorded from a reference point on the PVC well casings;
- The well depth was obtained from well construction records and confirmed by lowering the interface probe to the bottom of the well. The presence of any DNAPL was determined. The total depth of the well from the reference point was recorded. Water level data was collected from all the wells during as short a time period as possible to minimize the effects of short term water level fluctuations;
- The volume of water in the well was calculated based on the water level measurements below top of casing, total well depth, and the well diameter;
- The well was purged using an air bladder pump. Materials of construction were Teflon or stainless steel, suitable for collection of samples for VOC and metals analysis. Three wellbore volumes of water were removed from the well and containerized near the well in preparation for disposal. Temperature, pH, dissolved oxygen and conductivity were measured following the removal of three consecutive well volumes of water. All information collected during well purging and sampling was recorded;

- Groundwater samples were collected following the completion of well purging. Well sampling was performed using the air bladder pump. Samples were collected into appropriate containers supplied and prepared by the laboratory performing the analyses. Sample bottles were filled directly from the pump discharge tubing. Dissolved metals analysis was performed using field filtered samples. A new 0.45 micron disposable filter was used for each sample;
- All sample bottles were labeled in the field using a waterproof permanent marker. The information on the labels included: site name, sample and project number, date/time, sampler's initials, preservatives added (if any), and analysis to be performed;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- The samples were shipped and received at the laboratory within EPA approved standard holding times for each analysis.

ATTACHMENT O

Quality Control Procedures for Groundwater Sampling

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

Quality Control Procedures for Groundwater Samples
Chrysler Corporation
Dayton Thermal Products Plant

- Sample collection was completed using new disposable latex gloves, new disposable filters, laboratory prepared glassware, and thorough decontamination of the sampling equipment. Decontamination of the equipment was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was then rinsed using deionized water and allowed to air dry;
- Samples were labeled to show site name, sample and project number, date/time, sampler's initials, preservatives added (if any), and analysis to be performed;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- One VOC and one metals duplicate were collected and analyzed;
- One equipment blank was collected and analyzed for VOCs;
- One trip blank was analyzed for VOCs;
- The samples were shipped and received at the laboratory within the EPA standard holding times for each analysis.

DRAWING 1

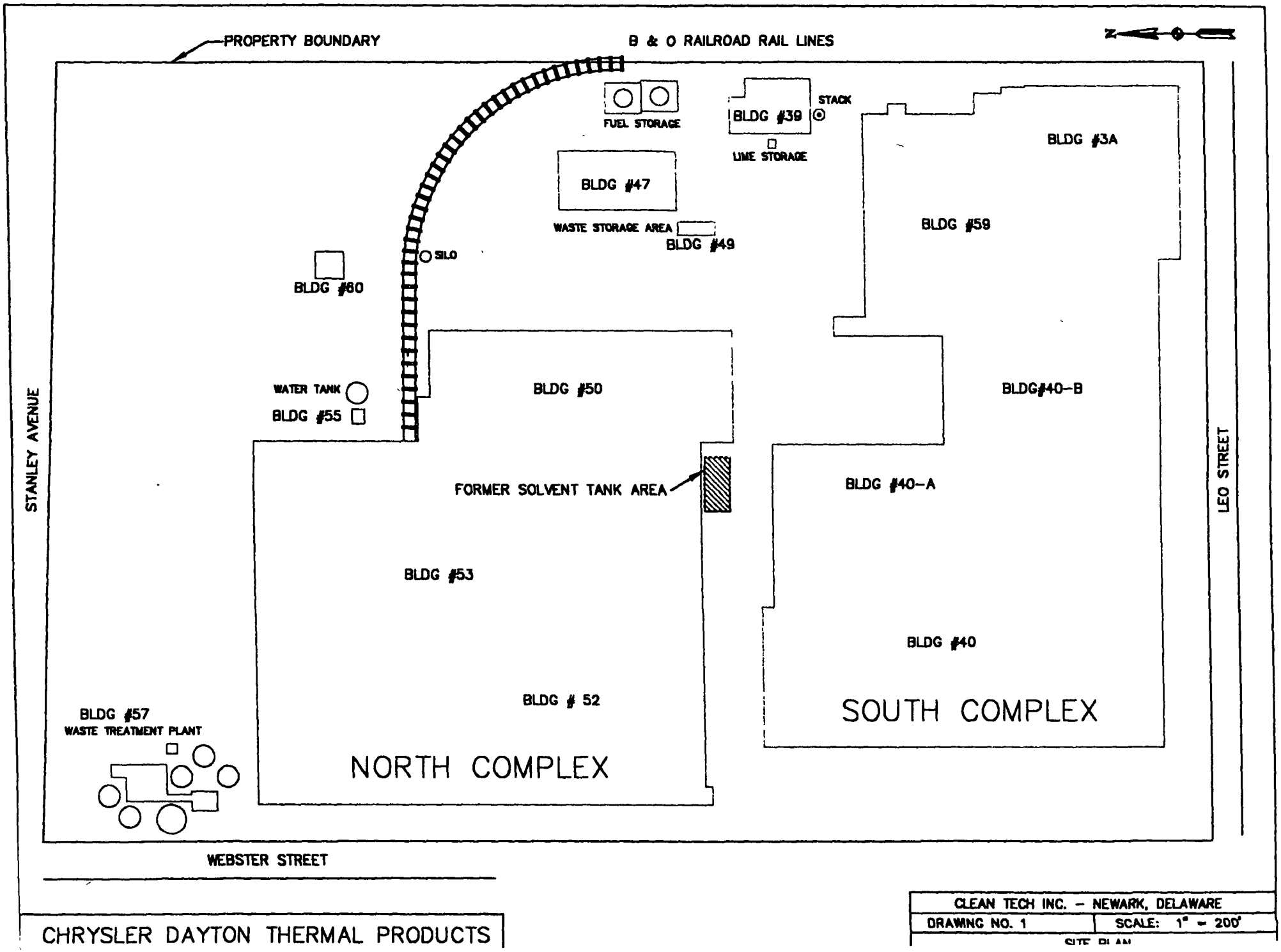
Site Plan

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404



CHRYSLER DAYTON THERMAL PRODUCTS

CLEAN TECH INC. – NEWARK, DELAWARE	
DRAWING NO. 1	SCALE: 1" = 200'
SITE PLAN	

DRAWING 2

Soil Vapor Survey

Sample Locations 1 Through 48

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Dayton Thermal Products Plant

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DRAWING 3

Soil Vapor Survey

Total VOCs in Shallow Vadose Zone

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Dayton Thermal Products Plant

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DRAWING 4

Soil Vapor Survey

Total VOCs in Deep Vadose Zone

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DRAWING 5

Soil Vapor Survey

TCA in Shallow Vadose Zone

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DRAWING 6

Soil Vapor Survey

TCA in Deep Vadose Zone

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DRAWING 7

Soil Vapor Survey

PCE in Shallow Vadose Zone

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Dayton Thermal Products Plant

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DRAWING 8

Soil Vapor Survey

PCE in Deep Vadose Zone

Chrysler Corporation

Dayton Thermal Products Plant

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DRAWING 9

Soil Vapor Survey

Vinyl Chloride in Shallow Vadose Zone

Chrysler Corporation

Dayton Thermal Products Plant

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DRAWING 10

Soil Vapor Survey

Vinyl Chloride in Deep Vadose Zone

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DRAWING 11

Soil Boring Locations

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DRAWING 12

Groundwater Monitoring Well Locations

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DRAWING 13

Soil Sample Results - Total VOCs

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DRAWING 14

Soil Sample Results - Tetrachloroethylene

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DRAWING 15

Soil Sample Results - Trichloroethene

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DRAWING 16

Round #1 Groundwater Results - Total VOCs

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DRAWING 17

Round #1 Groundwater Results - Tetrachloroethylene

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DRAWING 18

Round #1 Groundwater Results - Trichloroethene

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DRAWING 19

Round #2 Groundwater Results - Total VOCs

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DRAWING 20

Round #2 Groundwater Results - Tetrachloroethylene

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DRAWING 21

Round 2 Groundwater Results - Trichloroethene

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DRAWING 22

Groundwater Elevation Unconfined Aquifer - December 1994

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

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DRAWING 23

Groundwater Elevation Unconfined Aquifer - January 1995

Chrysler Corporation

Dayton Thermal Products Plant

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DRAWING 24

Groundwater Elevation Unconfined Aquifer - February 1995

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DRAWING 25

Geologic Cross-Section A-A'

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

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DRAWING 26

Geologic Cross-Section B-B'

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

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DRAWING 27

Geologic Cross-Section C-C'

Chrysler Corporation

Dayton Thermal Products Plant

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Dayton, Ohio 45404

ATTACHMENT C

Soil Vapor Survey Results

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

Sample Number	Location	Depth (ft)	1,1,1-Trichloroethane	Tetrachloroethene	Vinyl Chloride	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane
40	21	10	331 67	37 37	4 7	ND	ND	ND	ND	ND
41	21	20	2568 24	222 09	ND	41 18	33 1	ND	ND	ND
42	22	10	2 21	11 17	ND	ND	ND	ND	ND	ND
43	22	20	4 78	2017 65	ND	ND	33 29	ND	ND	ND
44	23	10	ND	10 02	ND	ND	ND	ND	ND	ND
45	23	20	4 73	12 69	ND	ND	ND	17 97	ND	ND
46	24	10	ND	5 91	17 88	ND	ND	ND	ND	ND
47	24	20	NA	NA	NA	NA	NA	NA	NA	ND
48	25	10	5 35	33 18	34 95	15 38	ND	ND	ND	ND
49	25	20	17 05	16 25	4 74	ND	ND	9 57	ND	ND
50	26	10	9 29	43 71	56 39	ND	ND	30 71	16 72	ND
51	26	20	92 73	18 85	16 24	ND	ND	ND	ND	ND
52	27	10	51 89	10 5	12 4	ND	ND	ND	10 09	ND
53	27	20	160 92	43 65	106 81	12 41	2 48	ND	35 94	ND
54	28	10	6 01	25 89	37 38	ND	ND	19 62	37 43	ND
55	28	20	ND	10 97	8 26	ND	ND	4 37	14 25	ND
56	29	10	7 68	12 93	46 55	ND	ND	25 83	17 56	ND
57	29	20	4 69	16 24	28 29	ND	ND	15 88	26 02	ND
58	30	7	ND	44 81	ND	ND	ND	ND	59 74	ND
59	31	7	ND	ND	ND	ND	101 87	ND	60 53	ND
61	33	10	NA	NA	NA	NA	NA	NA	NA	ND
62	33	20	2 79	5 96	19 02	ND	ND	10 25	5 66	ND
63	34	10	6 48	16 42	40 75	ND	ND	21 81	ND	ND
64	34	16	ND	18 51	11 31	ND	ND	ND	ND	ND
65	35	10	5 63	9 94	ND	ND	20 27	ND	ND	ND
66	35	20	ND	3 06	20 63	ND	ND	ND	ND	ND
67	36	10	NA	NA	NA	NA	NA	NA	NA	ND
68	36	20	ND	13 65	32 25	ND	ND	ND	ND	ND
69	37	10	5 15	104 17	112 07	ND	3 57	ND	ND	ND
70	37	20	14 82	160 66	40 74	ND	7 1	ND	ND	ND
71	38	10	ND	4 53	ND	ND	ND	ND	15 88	ND
72	38	20	4 27	11 33	ND	ND	15 98	14 45	11 09	ND
73	39	10	31 49	43 53	ND	ND	ND	ND	ND	ND
74	39	20	225 91	81 05	15 91	ND	141 58	8 71	ND	ND
75	40	10	ND	2 86	ND	ND	ND	2 58	ND	ND
76	40	20	ND	2 17	ND	ND	ND	ND	2 5	ND
77	41	10	5 33	8 94	ND	ND	ND	ND	ND	ND
78	41	20	ND	13 99	ND	ND	6 88	ND	ND	ND
79	42	10	ND	4 62	ND	ND	ND	ND	ND	ND
80	42	20	5 57	13 45	ND	ND	20 6	ND	ND	ND
81	43	10	2 64	19 44	ND	ND	10 28	ND	ND	ND
82	43	20	43 08	53 25	35 89	ND	2 55	ND	ND	ND
83	44	10	33 71	61 45	49 19	ND	ND	ND	ND	ND
84	44	20	116 95	103 7	29 92	ND	ND	ND	ND	ND
85	45	10	164 71	44 5	10 25	ND	ND	ND	ND	ND
86	45	20	1673 45	47 96	9 84	ND	ND	ND	ND	ND
87	46	10	4 4	6 99	36 53	ND	ND	ND	ND	ND
88	46	20	56 19	25 07	18 33	ND	3 74	ND	ND	ND
89	47	10	ND	ND	3 74	ND	ND	ND	ND	ND
90	47	20	34 23	9 09	41 92	ND	ND	ND	ND	ND
91	48	10	ND	5 24	14 82	ND	ND	ND	ND	ND
92	48	20	No Sample Collected at 20'							
	[redacted]				Soil Vapor Survey Dataset			Results are in Parts Per Billion (ppb)		
					March, 1995			Method Detection Level is 2 0 ppb		

ATTACHMENT D

General Procedures for Drilling and Soil Sampling

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

General Procedures for Drilling and Soil Sampling

Chrysler Corporation

Dayton Thermal Products Plant

Drilling Procedures - Soil Borings

- The drill rig, augers, bits, and tools were steam cleaned prior to the start of each boring. All equipment contacting soil or groundwater was steam cleaned prior to commencing each borehole and after completion of the last borehole. No lubricants were used on drill rod or auger joints;
- Split spoon soil samples were collected starting at approximately four feet BGS. Sampling continued to the bottom of each borehole at five foot intervals. Individual soil samples were stored in sample jars and labeled with information on the location, depth, date, and blow counts. The samples were stored on-site. Disposable latex gloves were worn by field team members while handling soil samples;
- All field activities were performed in accordance with the Health and Safety Plan (HASP). Personal protection levels for field personnel were followed as stipulated in the HASP. Compliance with these levels was maintained through air monitoring as prescribed in the HASP;
- Drilling fluids and cuttings, and decontamination fluids were screened for organic vapor emissions using a photoionization detector. No organic vapor measurements were found which exceeded the action levels described in the HASP;
- All drilling was supervised by a qualified geologist. Supervision included maintaining a field activities log, preparation of stratigraphic logs, and any appropriate photographic documentation.

Soil Sampling Procedures - Soil Borings

- Soil samples were collected using a two-inch O.D. split spoon sampler;
- Following advancement of the augers to the sampling depth, the split spoon sampler was lowered to the top of the sampling interval on the drill rods;
- Four six-inch intervals were marked on the drill rods;
- Soil samples were collected using a standard penetration test. The number of blows was recorded as applied by a 140 pound weight falling thirty inches to drive the sampler for each six-inch interval. A total sampled thickness of 24 inches was recorded. The blow counts for the second six-inch interval and third six-inch interval were added and recorded as the standard penetration number;
- Each sample was then brought to the surface and opened. Photoionization detector measurements were made and recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. oil descriptions used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample was tested using a hydrophobic dye for the presence of non-aqueous phase liquid. This was a qualitative screening test performed in the field at the time the sample was collected. The dye test would detect both light (LNAPL) and dense non-aqueous phase liquids (DNAPL) if present. The powdered dye, Sudan IV, was added to a slurry made from the soil sample and potable water. The slurry was then agitated by shaking the sample container. The dye would dissolve in the soil slurry if non-aqueous phase liquids were present in sufficient amounts, coloring the slurry a dark red. If non-aqueous phase liquids were not present, then the powdered dye would not dissolve in the slurry;

- Samples were stored in clean jars and labeled to show project, boring number, number of blows for advancing sampler, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site;
- The hollow stem auger equipped with a snug fitted steel stem plug was then advanced to the top of the next sample interval, the plug was removed and the above steps were repeated for the next sample;
- All boreholes were grouted to grade with a cement and bentonite mixture.

Drilling Procedures - Shallow Monitoring Wells

- The drill rigs, augers, bits, and tools were steam cleaned prior to the start of each boring. All equipment contacting soil or groundwater was steam cleaned prior to commencing each borehole and after completion of the last borehole. No lubricants were used on drill rod or auger joints;
- Split spoon soil samples were collected from the shallow wells starting at approximately four feet BGS and continued to the bottom of each borehole at five foot intervals. All soil samples were stored in sample jars and labeled with information on the location, depth, date, and blow counts. Blow counts were not recorded for those samples collected using the cable tool rig. The samples were stored on-site. Disposable latex gloves were worn by field team members while handling all split-spoon samples;
- All field activities were performed in accordance with the Health and Safety Plan (HASP). Personal protection levels for field personnel were followed as stipulated in the HASP. Compliance with these levels was maintained through air monitoring as prescribed in the HASP;

- Drilling fluids and cuttings, and decontamination fluids were screened for organic vapor emissions using a photoionization detector. No organic vapor measurements were found which exceeded the action levels as described in the HASP;
- All drilling was supervised by a qualified geologist. Supervision included maintaining a field activities log, preparation of stratigraphic logs, and any appropriate photographic documentation.

Soil Sampling Procedures - Shallow Monitoring Wells

- Soil samples were collected using a two-inch O.D. split spoon sampler;
- Following advancement of the augers to the sampling depth, the split spoon sampler was lowered to the top of the sampling interval on the drill rods;
- Four six-inch intervals were marked on the drill rods;
- Soil samples were collected using a standard penetration test. The number of blows was recorded as applied by a 140 pound weight falling thirty inches to drive the sampler for each six-inch interval. A total sampled thickness of 24 inches was recorded. The blow counts for the second six-inch interval and third six-inch interval were added and recorded as the standard penetration number;
- Each sample was then brought to the surface and opened. Photoionization detector measurements were made and recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. Soil descriptions used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample was tested using a hydrophobic dye for the presence of non-aqueous phase liquid;

- Samples were stored in clean jars and labeled to show project, boring number, number of blows for advancing sampler, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site;
- The hollow stem auger equipped with a snug fitted steel stem plug was then advanced to the top of the next sample interval, the plug was removed and the above steps were repeated for the next sample.

Soil Sampling Procedures - Deeper Monitoring Wells

- Soil samples were collected using a three-inch O.D. split spoon sampler attached to a set of downhole casing jars. Samples were collected for lithologic description only. No blow counts were recorded;
- Each sample was brought to the surface and opened. Photoionization detector measurements were recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. Soil descriptions used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample from the semi-confined aquifer was tested using a hydrophobic dye for the presence of non-aqueous phase liquid;
- Samples were stored in clean jars and labeled to show project, boring number, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site.

SITE ASSESSMENT SUMMARY

Prepared for
Acustar - Dayton Thermal Products Division
1600 Webster Street
Dayton OH 45404

Prepared by
Clean Tech
2700 Capitol Trail
Newark DE 19711
(302) 999-0924

February, 1994

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CLEAN **TECH**

February 2, 1994

Mr. Luther L. Blair
Manager - Environmental Planning
Acustar, Inc.
1850 Research Drive
CIMS 404-01-01
Troy MI 48083

Re: Site Assessment Summary Final Draft

Dear Lou:

Enclosed is the final draft of the site assessment summary report which was prepared for Dayton Thermal Products Division. The report includes a review of all previous site audits, identification of on-site and off-site sources of contamination, a review of regional and local geology, and overview of remediation objectives as required by Ohio EPA, and a summary including recommendations. We have incorporated all revisions by you and Doug.

After you have reviewed the report, please contact me so that we may discuss the report.

Sincerely,

Deb

Deborah A. Buniski, P E.
President
CLEAN TECH

Enclosure

cc: D. Orf

(Chrysler\Dayton\SI1093.rpt)

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SECTION 1.0 - BACKGROUND

The report was prepared by Clean Tech (CT) for the Dayton Thermal Products Plant (DTPP) located at 1600 Webster street in Dayton, Ohio This plant is a part of Acustar/Components (A/C), a division of Chrysler Corporation.

1.1 Purpose

DTPP requested that CT review and compile available information on the plant and surrounding sites to determine if the surrounding sites or activities at the plant may have impacted the soil or groundwater. The report's purpose was to gather additional information to complete an environmental assessment of the plant site This report will be used as the basis for the design and implementation of a hydrogeolocial study of the facility

1.2 Report Preparation Methodology

The following provides a summary of the methodology and procedures used to research and compile the information contained in this report.

1 Meetings were held with key personnel to obtain background information on past and current plant operations Personnel interviewed included Mr Douglas J Orf, Environmental Coordinator for the Dayton Plant, and Mr Luther L Blair, Manager of Environmental Planning for A/C

2. Records relating to hazardous wastes generated by the Dayton Plant during the past five years were reviewed Other reports and records reviewed included reported spills and MSDSs compiled for the facility

3 The State of Ohio Environmental Protection Agency records of surrounding sites were, also reviewed for additional information The companies whose records were requested included DAP Inc , Gem City Chemical Inc , Brainerd Industries, Hohman Plating and Manufacturing Company, Gem City Stamping, Inc , American Lubricants

Company, Ris Paper Company, Angell Manufacturing Company, and Paint America Company. Access to the following records for these facilities was requested: hazardous material spill reports, generator annual hazardous waste reports, agency site investigations, and studies relating to soil/groundwater remediation projects. Results of this research are presented in Section 3 2 of this report.

4. Additional information acquired and reviewed included copies of the soil survey prepared for Montgomery County (Soil Conservation Service), groundwater resources map (James J. Schmidt), Dayton North Quadrangle map (United States Geological Survey), State of Ohio Soil Contamination Regulations, Maximum Contaminant Levels (MCLs) standards for public water supplies and procedures established by the State of Ohio Division of Emergency and Remedial Response (DERR) in the identification of ARARs

The findings and discussions are based solely on existing information. The overall objective of this report is to assemble available information which will be used to develop a hydrogeologic study to more fully characterize the Dayton plant site.

1.3 Report Format

Section 1 provides the purpose, methodology and format of the report Section 2 provides a brief summary of the site's history, past and current operations, and previous site investigations that were completed such as soil gas surveys, soil borings, and remediation programs Section 3 identifies plant activities which may have impacted the soil or groundwater This section also includes discussions about possible off-site sources of regulated substances which may have impacted the Dayton plant and the extent of impact at these sites

Section 4 describes the geology and hydrogeology of the immediate area as well as the region. It details the local groundwater uses and the impact of surrounding groundwater treatment systems and wellfields.

Section 5 discusses remediation objectives and the current policy at Ohio EPA concerning site investigations and remedial activities. It also includes an evaluation of what policies or regulations must be addressed before a remedial alternative is selected and implemented.

Section 6 provides an outline of the types of field investigations which would more fully characterize the site and which would delineate possible soil or groundwater contamination. It also includes a field sampling plan outline and a discussion of sampling objectives.

SECTION 2.0 - SITE DESCRIPTION

DTPP is located at 1600 Webster Street in Dayton, Ohio. The facility contains over 1 3 million square feet under roof and is located on about 60 acres. (For a site location map see Figure 1.)

The facility is immediately surrounded by the following industries Brainerd Industries and Paint America Company on Webster Street and American Lubricants and Gem City Chemical Company on Air City Avenue. There are several other industries and commercial operations in the vicinity (DAP, Inc., Hohman Plating and Manufacturing, Gem City Stamping, Inc., Ris Paper Company, and Angell Manufacturing Company) in addition to private residences A facility map which provides further detail of the site including buildings and other operations is included as Figure 2

2.1 Past Site History

Past operations of the plant prior to Chrysler's acquisition in 1936 included the assembly of Maxwell cars from about 1907 - 1936 The plant historically has been used for a variety of purposes including: manufacturing furnaces, gun parts, aluminum and copper tube forming operations, light machining, plating, metal stamping, welding, soldering, degreasing, painting, plastic molding, and assembly, as well as maintenance of these processes, equipment and structures. The Maxwell building complex, which was a group of twelve former buildings, was used by Chrysler until 1990 when it was demolished A portion of the former building footprint was replaced with a new manufacturing Building 59 in 1991 For the last 10 - 15 years prior to demolition, the Maxwell Complex was primarily used for storage purposes

2.2 Current Plant Operations

Current operations at the facility include primarily the manufacture, assembly and finishing of heat exchangers and air conditioning components for motor vehicles The facility consists of 8

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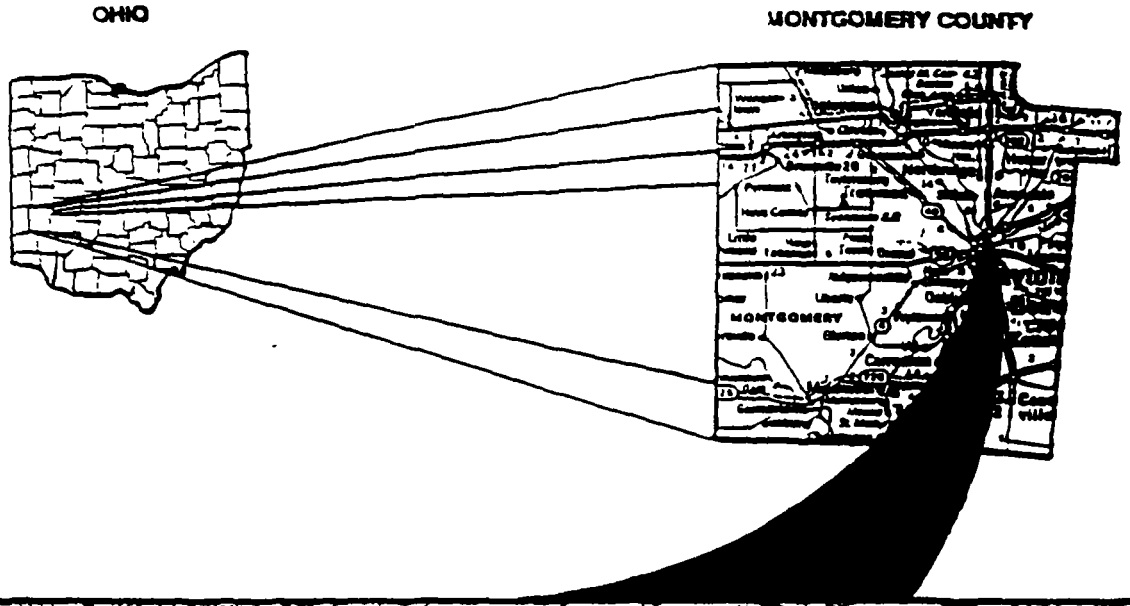

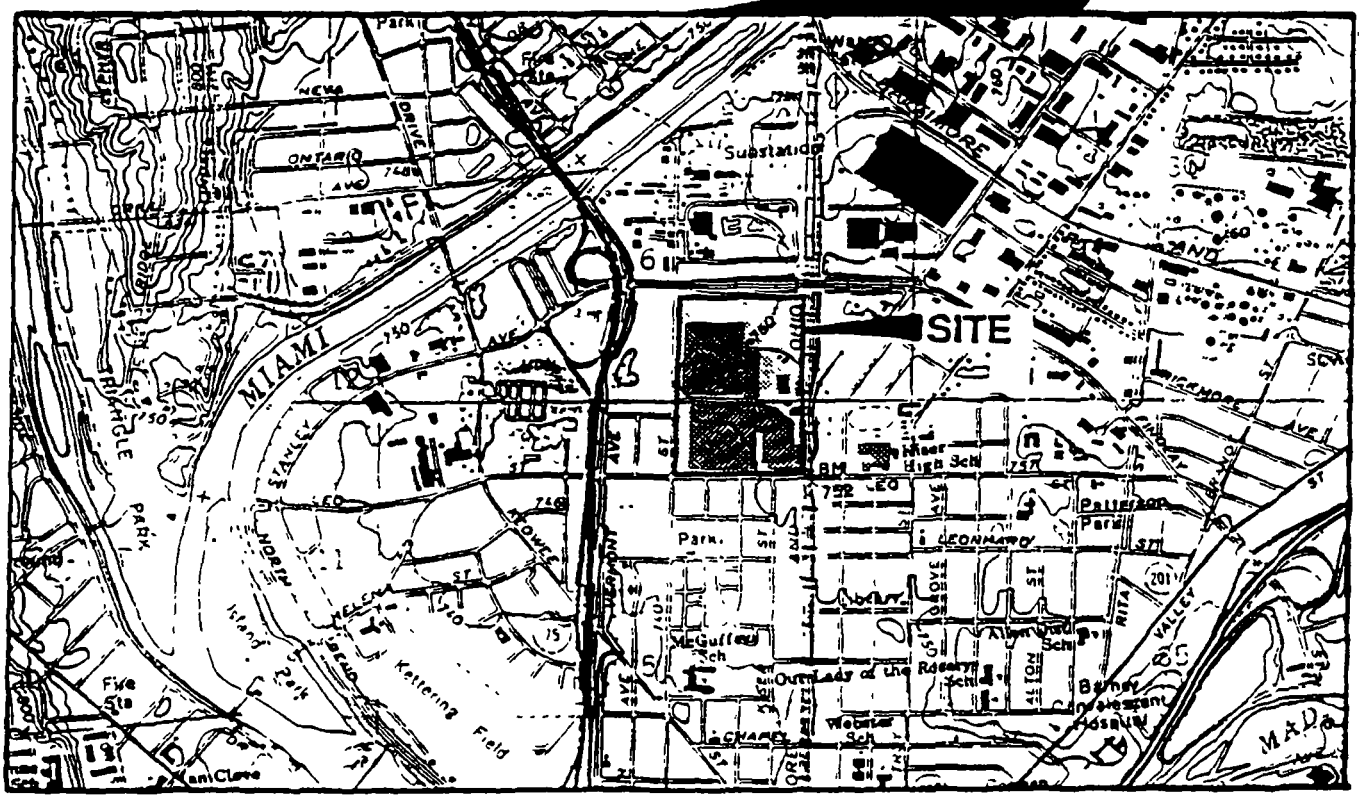

SITE LOCATION MAP

Modified from U.S.G.S Geological Survey, Dayton North, Ohio quadrangle, photo revised 1981.

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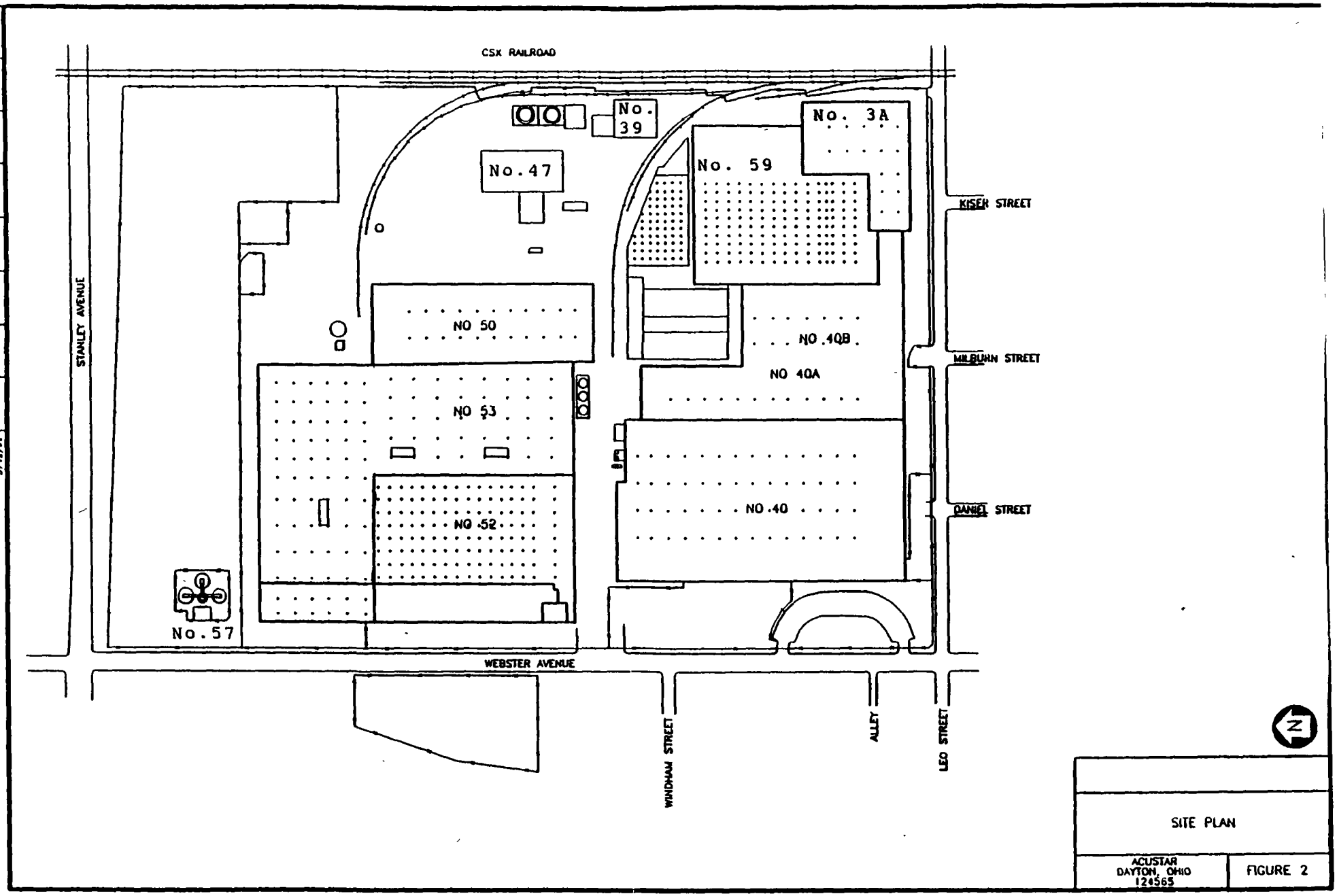
FIGURE 1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STANLEY AVENUE
No. 39
No. 47
No. 3A
No. 59
KISER STREET
NO 50
NO .40B
NO 40A
MILBURN STREET
NO 53
NO .40
NO 52
DANIEL STREET
No. 57
WEBSTER AVENUE
WINDHAM STREET
ALLEY
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SITE PLAN
ACUSTAR DAYTON, OHIO 124565
FIGURE 2

manufacturing buildings, a powerhouse, wastewater treatment plant, and incidental storage buildings.

Utilities to the site are provided as follows:

- Potable Water - Dayton Water Authority
- Sanitary Wastewater - City of Dayton (POTW)
- Boiler Make-up, Compressor and Non-Contact cooling water - On-site wells
- Process Wastewater - On-site Wastewater Treatment Plant

Surface water is collected through various swales and a stormwater piping system located throughout the facility All run-off eventually enters the Greater Miami River via Lucille Street and Herman street storm sewer outfalls from Webster Street

2.3 Previous Investigations

It was during the demolition of the Maxwell Complex and prior to construction of Building 59 that DTPP retained Miami Geological Services, Inc to collect soil samples, and complete soil monitoring as excavation was on-going. The original scope of the investigation was confined to the demolition area which include Buildings 3, 4, 5, 6, 7, 8, 9, 10, 13, 34, 34A, 34B, and new Building 59 footprint area.

When the scope and complexity of environmental concerns increased during demolition, Burlington Environmental was retained to complete testing and analysis of the area around the Maxwell Complex. The field activities were quite extensive and included the evaluation of:

- Soil conditions in and around existing structures which would be removed during construction, including soils around such areas as sewer lines, pipelines, sumps, storage pads and storage areas,

- Soil conditions in areas to be excavated, including foundation areas, column piers, and adjacent paved surfaces,
- Soils remaining in-place in selected areas such as the clay soil used as part of the foundation material;
- Soil stockpiled on-site for disposal or remediation, and;
- Slabs of concrete from the demolition of the foundation of the Maxwell Complex.

The investigation of the soils during the demolition of the Maxwell Complex included:

- Test boreholes in areas which were excavated for strip foundations;
- Test boreholes in areas which were excavated for column piers,
- Soil sample testing after excavation of sewer lines, sumps, catch basins, and oil/water separators;
- Soil gas and groundwater analyses which focused on the old Maxwell Complex (new Building No 59), several adjacent buildings (Buildings No 40A and 40B) and several other selected locations throughout the site.

The initial scope of investigation was confined to the Maxwell Complex demolition site which became the new Building 59 footprint area As a result of the analysis of the soils, plant personnel became aware of potential environmental impacts Sampling was expanded to include soil gas testing in other selected areas. Testing included 167 soil gas samples, 28 groundwater headspace samples, and 23 groundwater samples. Groundwater samples were taken as part of the soil gas investigation and did not involve placement of monitoring wells Soil gas and groundwater headspace samples were analyzed for volatile organics Groundwater samples were retrieved through the soil gas probe and submitted for laboratory analysis for volatile organic compounds (VOCs) Figure 3, from the Mathes/Burlington soil gas investigation report, contains the sampling locations from April, 1991

Testing focused on the Maxwell Complex area and adjacent Buildings 40A and 40B as well as other locations throughout the site as noted in Figure 3 Soil gas samples from Buildings 40A and 40B were taken at 0 - 1 foot, 3 - 4 foot, and 6 - 7 foot depths Additional soil gas sample locations throughout the site were taken at 8 to 10 foot and 19 to 20 foot depths Groundwater samples were generally taken at 24 - 25 foot depths and included groundwater headspace testing. Groundwater samples were taken at 29 - 30 foot depths at each of three locations noted The test results which were not sampled and analyzed according to U.S EPA methodologies or protocol, indicated the following compounds may be present:

Trichloroethene (TCE)

- Soil Gas Samples - Buildings 40A and 40B (0-1', 3-4', and 6-7' depths) - Concentrations at each depth appeared to be highest on the east side of Building 40B which is adjacent to Building 59 A trichloro trifluoroethane (CFC-113) degreaser station was formerly located on the east side of Building 40B at the time of sampling. However, the degreaser system was removed from service in 1991 and replaced with an aqueous washer system

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Highest concentrations were located in Building 40A, the east side of Building 40B, and the west side of the Maxwell Complex excavation area (adjacent to Building 40B).

- Groundwater Headspace and Groundwater Samples - Site Wide Locations (24-25' and 30-31' depths - Highest readings in the groundwater headspace samples were located in Buildings 40A, the east side of Building 40B, and the west side of the Maxwell Complex excavation area Groundwater sample concentrations were highest on the west side of the Maxwell Complex excavation area, the west side of Building 40, at isolated outside locations south of Building 3A, east of Building 50, and south of

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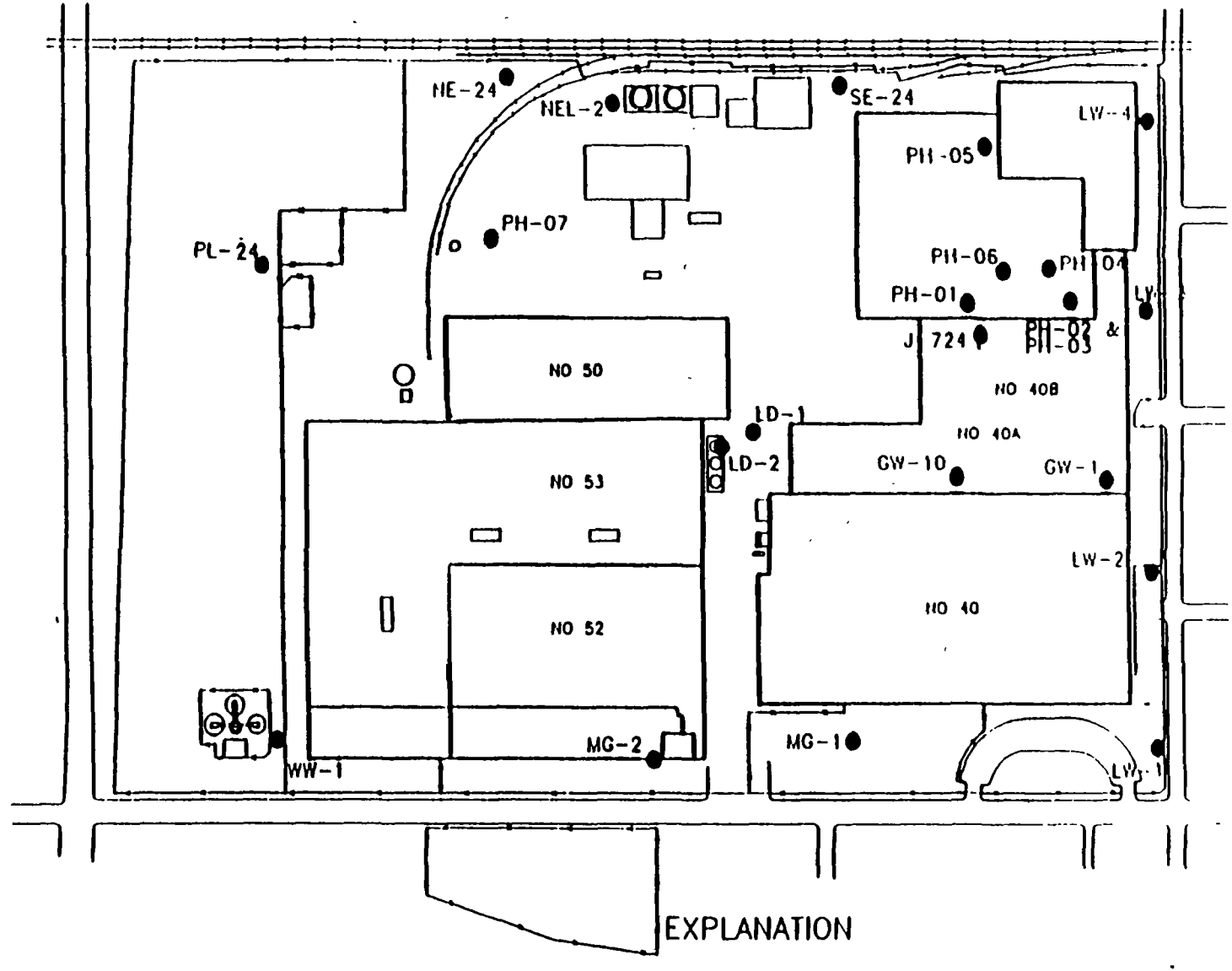

NOTE: Soil gas and groundwater headspace samples were collected from PH-02 and groundwater samples were collected from PH-03

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SAMPLING LOCATIONS

FIGURE 3

Building 53 The area outside Building 53 is the present location of the 1,1,1-trichloroethane storage tanks which are scheduled to be taken out of service in 1994 Selected groundwater samples at 30 - 31 foot depths were consistent with 24 - 25 foot depth readings with the exception of the sample taken south of Building 40B which showed an increase in magnitude at the 24 - 25 foot depths

1,1,1-Trichloroethane (TCA)

- Soil Gas Samples - Buildings 40A and 40B (0-1', 3-4', and 6-7' depths) - Concentrations at each depth appeared to be highest near the 1,1,1-trichloroethane degreaser station and former CFC-113 degreaser station along the east side of the building. The CFC-113 degreaser was taken out of service in 1991 The TCA degreaser is scheduled to be removed from service in the first quarter of 1994 An aqueous based washer station is scheduled to replace it

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Highest concentrations were found in samples taken along the western section of the Maxwell Complex, the eastern section of Building 40B (near the former location of the freon degreaser station), the western section of Building 40A, and the south end of Building 53 (the location of TCA storage tanks) The TCA storage tanks are scheduled to be taken out of service in 1994.

- Groundwater Headspace and Groundwater Samples - Site Wide Locations (24-25' depths) - Groundwater headspace and groundwater samples at 25 foot depths found relatively higher concentrations in the same locations as the soil gas samples at 8 - 10 foot and 19 - 20 foot depths The groundwater samples taken at 30 - 31 foot depth also yielded similar results There were other isolated locations where relatively elevated groundwater concentrations of TCA were detected

Tetrachloroethene (PCE)

- Soil Gas Samples - Building 40A and 40B (0-1', 3-4', and 6-7' depths) - Concentrations appeared to be highest in the center section of the Buildings 40A and 40B The Burlington site assessment reports that a former process unit consisted of a parts degreaser was located in this general vicinity but was removed from service in 1982

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Concentrations were highest south of Building 53 (near the TCA storage tanks), the eastern section of Building 40B (near the location of the former CFC-113 degreaser station) and the western section of Building 40A

- Groundwater Headspace and Groundwater Samples - Selected Site Wide Locations (24-25' and 30-31' depths) - Concentrations were highest in the same locations as the soil gas samples take at 8 - 10 foot and 19 - 20 foot depths. Groundwater concentrations were also relatively higher at sample locations east of Building 50 and along the eastern boundary of the site. There were other isolated locations with elevated groundwater concentrations of PCE

1,1-Dichloroethene

- Soil Gas Samples - Buildings 40A and 40B (0-1', 3-4', and 6-7' depths) - Concentrations appeared to be relatively higher in the eastern section of Building 40B However, at depths below 3 - 4 feet, concentrations were elevated along the west side of Building 40A Burlington noted a possible problem with the identification and reliable measurement of 1,1-dichloroethene due to lab instrumentation/calibration problems

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Concentrations were relatively higher along the western section of the Maxwell Complex, the eastern section of Building 40B (near the former CFC-113 degreaser), and the western section of Building 40A.

- Groundwater Headspace and Groundwater Samples - Site Wide Locations (24-25' and 30-31' depths) - Groundwater headspace concentrations were relatively higher at the same locations as the soil gas samples taken at 8 - 10 foot and 19 - 20 foot depths and south of Building 53 Groundwater sample concentrations were elevated at locations south of Building 53 (in the general vicinity of the TCA storage tanks scheduled to be removed from service in 1994) The Soil Gas Investigation report noted the discrepancy of high concentrations of 1,1-dichloroethene observed by laboratory results but not observed during field testing.

cis-1,2-Dichloroethene

- Soil Gas Samples - Buildings 40A and 40B (0-1', 3-4', and 6-7' depths) - Concentrations appeared to be relatively higher along the east side of Building 40B (near the location of the former CFC-113 degreaser station) and center of the building (in the general vicinity of the parts degreaser taken out of service in 1982)

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Concentrations were relatively higher along the western section of the Maxwell Complex, the east section of Building 40B, and east of Building 50

- Groundwater Headspace and Groundwater Samples - Site Wide Locations (24-25' and 30-31' depths) - Groundwater headspace concentrations were relatively higher at the

same locations as soil gas samples taken at 8 to 10 foot and 19 to 20 foot depths Groundwater samples were non-detect

trans-1,2-Dichloroethene

- Soil Gas Samples - Buildings 40A and 40B (0-1', 3-4', and 6-7' depths) - Soil gas samples were non-detect.

- Soil Gas Samples - Site Wide Locations (8-10' and 19-20' depths) - Samples were not taken

- Groundwater Headspace and Groundwater Samples - Site Wide Locations (24-25' and 30-31' depths) - Groundwater samples results were relatively higher in the western section of the Maxwell Complex

1,1,2-Trichloroethane (Groundwater samples only). Sample results were relatively high in the western section of the former Maxwell Complex Concentrations were much lower in the Maxwell Complex, south of Building 53, and in the southeast property corner

1,1-Dichloroethane (Groundwater samples only): Groundwater sample results were relatively higher in the western section of the Maxwell Complex, south of Building 53 (current location of TCA tanks), and along the southeast corner of the property

1,2-Dichloroethane (Groundwater samples only) Groundwater sample results were relatively higher in the western section of the Maxwell Complex, and south of Building 53 (near the current location of the TCA storage tanks)

In summary, solvents were found in the soil under Buildings 40A and 40B, the south western portion of the former Maxwell Complex, in the storage area east of Building 50, and south of Building 53 near the TCA tanks.

2.4 Soil Remediation Program

As a result of the investigation, four stock piles were created with the soil removed from the footprint of Building 59 The soils were treated as follows:

- A stockpile of clean soil was relocated to a parking lot in the northeast portion of the property
- A stockpile was constructed north of Building 47 to treat soil primarily impacted with total petroleum hydrocarbons (TPH)
- Another stockpile was located in the same vicinity of soils that were primarily impacted by volatile organics (VOCs).
- Another stockpile was located southeast of the petroleum pile of soil which was impacted by a variety of compounds.

The VOC and TPH piles were treated by vacuum extraction Two blowers were installed in each pile and were connected by manifolds to the piping at the base of the bed The VOC pile was cleaned by this process. The TPH soils have since been combined with the unknown pile and are now undergoing biotreatment.

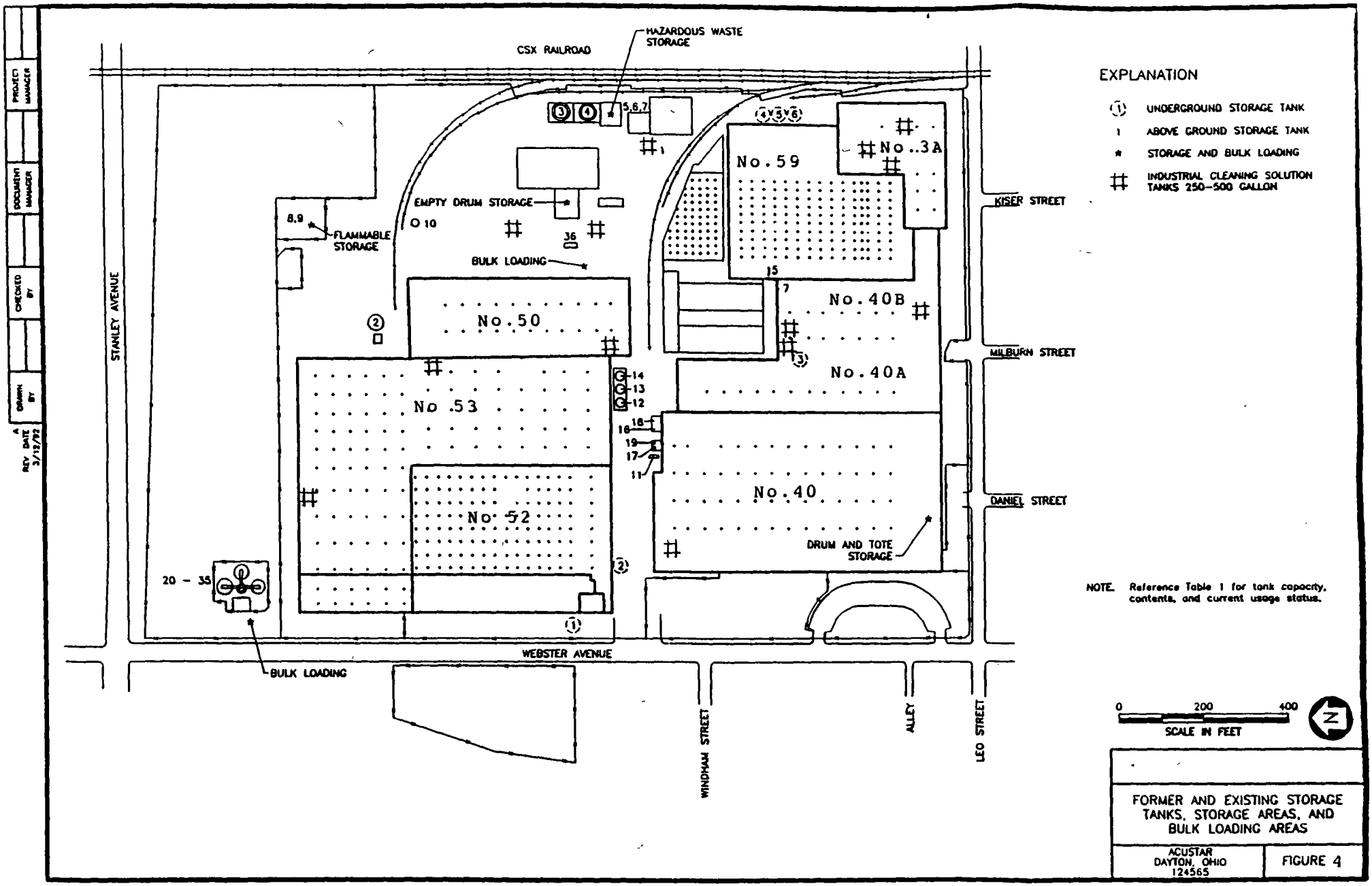
SECTION 3.0 - POTENTIAL ENVIRONMENTAL IMPACTS

This section of the report will summarize the potential on-site sources identified in the Burlington report (Environmental Site Assessment - March, 1992) and provide an update on the status of these sources. In addition, various potential off-site sources were evaluated and our findings are presented herein.

3.1 On-Site Potential Sources

The various activities at the plant which may have impacted the soil or groundwater were reviewed These sources include underground and above ground storage tanks, chemical storage areas, hazardous waste accumulation storage areas, sumps for waste oil or process wastewater, past spills, and various processes or operations of the plant These potential on-site sources of contamination were identified in the above referenced report prepared by Mathes/Burlington (see Figure 4). In summary the following was identified

- There were 36 above ground storage tanks noted in the report The tanks store a variety of materials including. fuels, acids, polymers, oils, and solvents The tanks which store TCA and its sludge are located on the south side of Building 53 and the north side of Building 40
- There were 6 underground storage tanks (USTs) on-site, 3 gasoline and 3 fuel oil. Of these, 1 gasoline and 2 fuel oil USTs were properly abandoned The 2 remaining gasoline USTs were removed in July, 1993 under State supervision and the area surrounding the tanks was declared clean The other fuel oil tank was accidentally discovered during excavation activities associated with the Maxwell Complex demolition This 500 gallon tank was subsequently removed by Mathes/Burlington and surrounding soils were treated to ensure the soil was clean There is no knowledge of any remaining USTs on the DTPP site.
- There are 4 hazardous waste streams generated by the plant They are



FORMER AND EXISTING STORAGE TANKS, STORAGE AREAS, AND BULK LOADING AREAS

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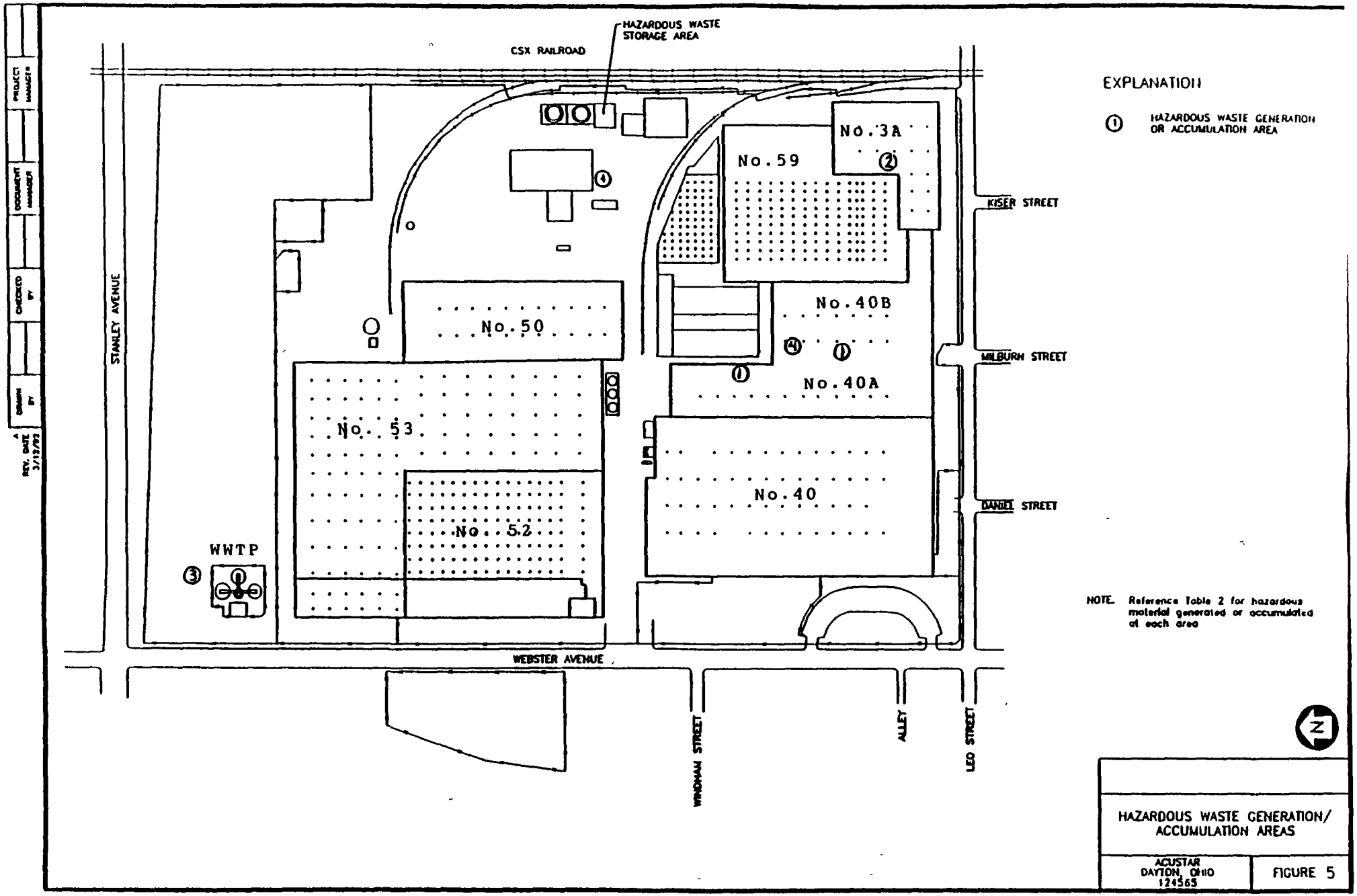
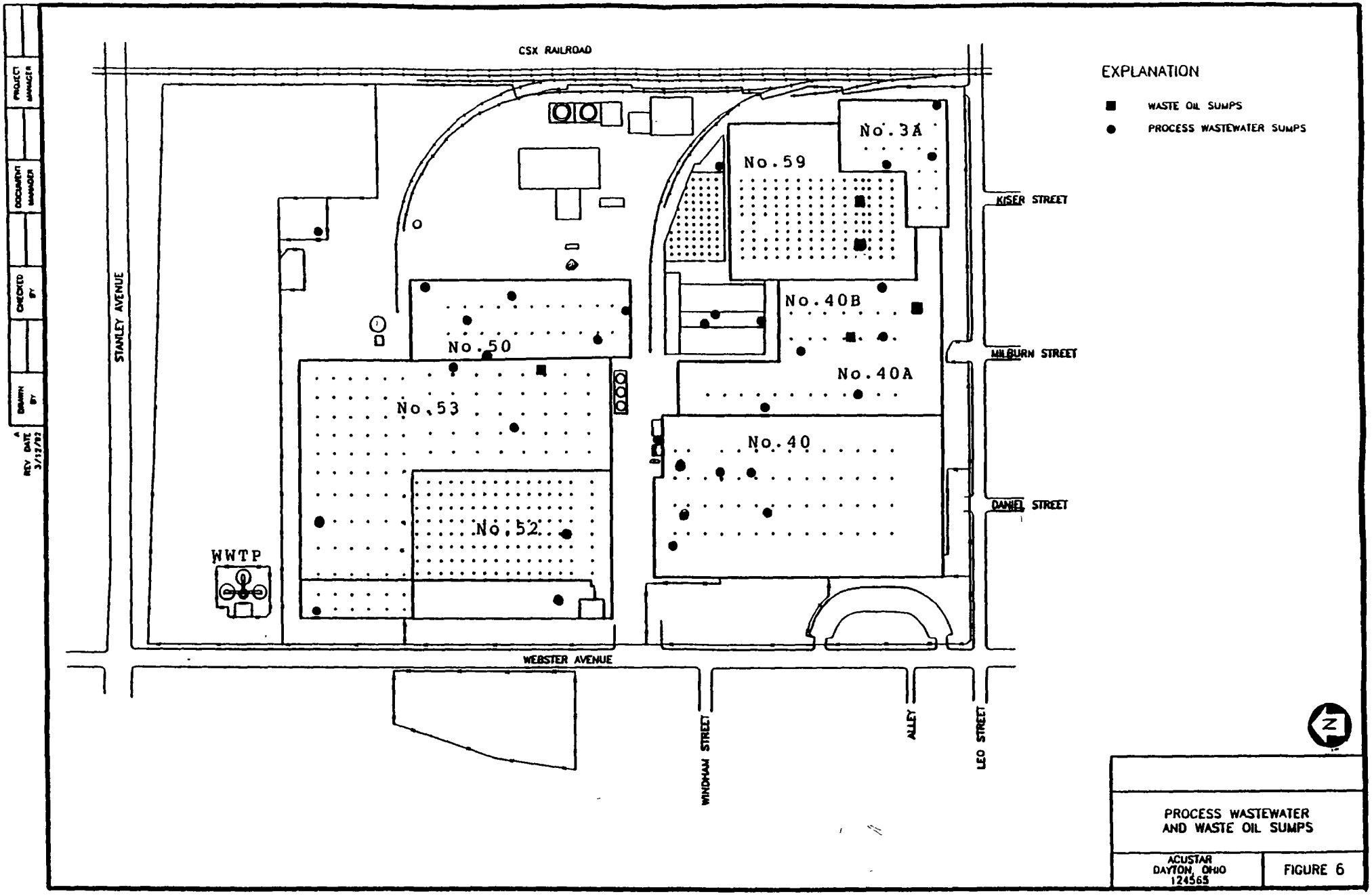
FIGURE 4

1. The combined degreaser sludges from the CFC-113 and TCA operations
2. Maintenance-derived paint waste containing isopropyl alcohol
3 Waste water treatment plant sludge
4 Magnesium-containing waste

(See Figure 5 for hazardous waste generation and accumulation areas)

- An in-house program is underway to reline and/or recoat the sumps. A majority are now complete Sumps are now being capped.
- Process areas were also investigated. Figure 7 of the Burlington report identifies those areas that contain processes of concern. A listing of process areas of concern in the Burlington report has been updated since DTPP has undertaken a program to remove and replace those processes using regulated substances There are currently three chlorinated solvent degreasers in the plant, two in the production area and one small unit in a lab A TCA degreaser is located in the NE area of Building 40A and is scheduled for replacement with an aqueous washer and removal in early 1994 A CFC-113 degreaser is located in the middle of Building 40A and is scheduled for replacement in mid-1994 and will be replaced by a vacuum de-oiling system A small CFC-113 engineering laboratory degreaser will be replaced and removed as soon as a suitable alternative can be found
- Clean Tech reviewed spill records maintained by DTPP from mid-1988 through mid-1993 The records included internal documentation on spills that required notification of State and Federal agencies. Of the 36 spill records reviewed, 25 percent were attributed to machine or hydraulic oil products Locations included the area south of the non-hazardous storage area, and Buildings 6, 39A, 3A, 53, and the former Maxwell Complex. Quantities released did not typically exceed fifty gallons and ranged from 0 5 - 300 gallons. These surface spills typically involved waste oil sumps and/or the storm sewer system Spills included


HAZARDOUS WASTE STORAGE AREA
CSX RAILROAD
STANLEY AVENUE
No. 3A
No. 59
KISER STREET
No. 40B
No. 50
MILBURN STREET
No. 40A
No. 53
No. 40
No. 52
DANIEL STREET
WWTP
WEBSTER AVENUE
WINDHAM STREET
ALLEY
LEO STREET
EXPLANATION
① HAZARDOUS WASTE GENERATION OR ACCUMULATION AREA
NOTE. Reference Table 2 for hazardous material generated or accumulated at each area
HAZARDOUS WASTE GENERATION/ ACCUMULATION AREAS
ACUSTAR DAYTON, OHIO 124565
FIGURE 5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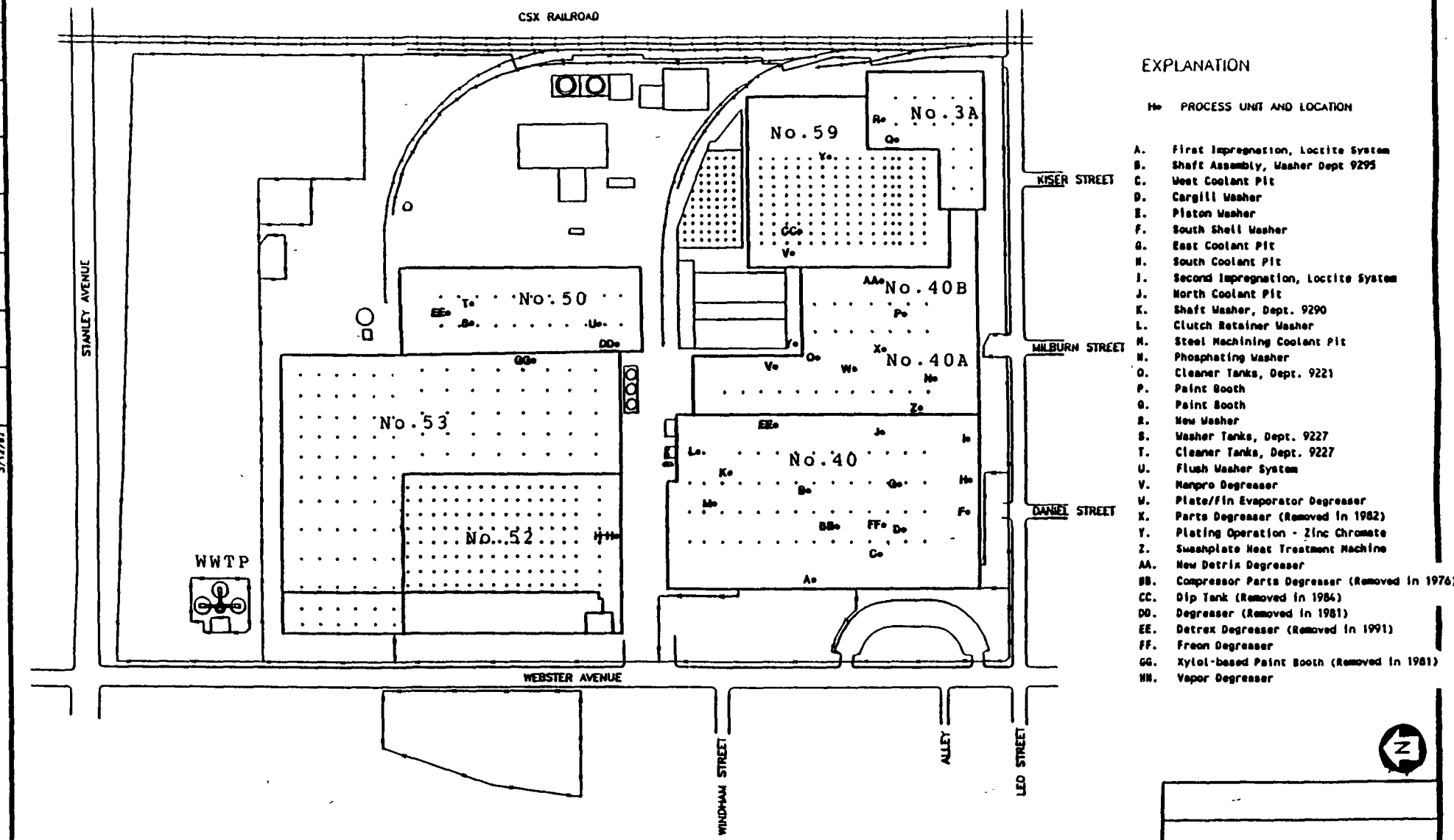
WINDHAM STREET
ALLEY
LEO STREET
No. 3A
No. 59
No. 40B
No. 40A
No. 40
No. 50
No. 53
No. 52
WWTP
EXPLANATION
WASTE OIL SUMPS
PROCESS WASTEWATER SUMPS
N
PROCESS WASTEWATER AND WASTE OIL SUMPS
ACUSTAR DAYTON, OHIO 124565
FIGURE 6


CSX RAILROAD
STANLEY AVENUE
No. 59
No. 3A
No. 50
No. 40B
No. 40A
No. 53
No. 40
No. 52
WWTP
KISER STREET
WILBURN STREET
DANIEL STREET
WEBSTER AVENUE
WINDHAM STREET
ALLEY
LEO STREET
EXPLANATION
He PROCESS UNIT AND LOCATION
A. First Impregnation, Loctite System
B. Shaft Assembly, Washer Dept 9295
C. West Coolant Pit
D. Cargill Washer
E. Piston Washer
F. South Shell Washer
G. East Coolant Pit
H. South Coolant Pit
I. Second Impregnation, Loctite System
J. North Coolant Pit
K. Shaft Washer, Dept. 9290
L. Clutch Retainer Washer
M. Steel Machining Coolant Pit
N. Phosphating Washer
O. Cleaner Tanks, Dept. 9221
P. Paint Booth
Q. Paint Booth
R. New Washer
S. Washer Tanks, Dept. 9227
T. Cleaner Tanks, Dept. 9227
U. Flush Washer System
V. Manpro Degreaser
W. Plate/Fin Evaporator Degreaser
X. Parts Degreaser (Removed in 1982)
Y. Plating Operation - Zinc Chromate
Z. Swashplate Heat Treatment Machine
AA. New Detrix Degreaser
BB. Compressor Parts Degreaser (Removed in 1976)
CC. Dip Tank (Removed in 1984)
DD. Degreaser (Removed in 1981)
EE. Detrex Degreaser (Removed in 1991)
FF. Freon Degreaser
GG. Xylol-based Paint Booth (Removed in 1981)
HH. Vapor Degreaser
N
PROCESS UNITS AND AREAS
ACUSTAR DAYTON, OHIO 124565
FIGURE 7
PROJECT MANAGER
DOCUMENT MANAGER
CHECKED BY
DRAWN BY
A REV DATE 3/12/92

1 About 500 gallons of chrome-containing paint sludge in Building 47, November, 1988

2. About 12,000 gallons of zinc and chrome-containing process waste water in the NW corner of Building 53 A minimum of 7,000 was vacuumed-up in March, 1989

3 Overfill of TCA storage tank (quantity unspecified), June, 1989

4 Chromium sludge discovered during demolition of Maxwell Complex in old, abandoned sewer leading to an oil-water separator east of Building 40B, November, 1990

5. About 30 gallons of CFC-113 in empty drum storage area, November, 1990.

6. About 35 gallons of untreated waste water containing flux rinse water near Building 50, March, 1991

7 About 150 gallons of water/sulfuric acid solution in Building 50 parts washer, January, 1992

8. Unspecified quantity of TCA from storage tank next to Building 53, May, 1992

9 Unspecified quantity of Alcoat 300B, conversion coating accelerator, in containment area of Building 40A, February, 1992

3.2 Off-Site Potential Sources

A survey of potential off-site sources of regulated compounds was conducted using zip code areas. A survey of the EPA and Ohio EPA databases (1991) was previously completed using the Zip Code of 45414 Identified sites were listed in Appendix A of the Burlington Site Assessment report and were depicted in Plate 1 of that report These records were again reviewed and it was determined that the following facilities were within an about two mile radius or less to the plant These include, according to our search:

EPA Sites

- Gem City Chemicals, Inc.

CERCLIS Sites

- Montgomery County North Incineration

Ohio EPA did not have any records for American Lubricants Company, Montgomery County North Incinerator, Ris Paper Company, Gem City Stamping, Inc., and Brainerd Industries Hohman Plating and Manufacturing and Angell Manufacturing Company information consisted of contingency plans, RCRA inspections and records of personnel right-to-know training. There have been no site investigations or remediation projects at any of these sites according to State of Ohio EPA records. The most extensive records obtained for remediation activities were for Gem City Chemicals Inc. and DAP, Inc

DAP Inc is located at 220 Janney Road in Dayton, Ohio DAP Inc is involved primarily in the manufacture of adhesive products A 1988 site assessment report was prepared by Applied Geotechnology, Inc The facility began operation in the early 1960s and has been involved in the manufacture of caulking, glazing, and adhesive compounds The property covers about 6 acres and includes a manufacturing and warehouse building, several underground storage tanks, outside storage, parking lots, and undeveloped open areas

Based on historic information there are several in-plant tanks used to store materials including methyl ethyl ketone (MEK), methylene chloride, TCA, latex, paragon-500, sodium silicate, NF Brush (2000), and Tergital NP-10 Materials stored in the USTs include various halogenated and non-halogenated volatile organic solvents, toluene/lactol blend, MEK, mineral spirits, naphtha, acetone, negaloid toluene, and TCA.

Soil samples have been taken at various locations on the property including the underground storage tank area and the undeveloped area north of the manufacturing building. The samples were tested for TPH and VOCs. About one-third of the samples contained TPH concentrations above detection limits, 9 samples contained greater than 50 mg/kg and 1 sample contained greater than 100 mg/kg Approximately one-fourth of the samples had detectable concentrations of the

Target Compound List (TCL) VOCs The most frequently detected VOCs was TCA, with 24 samples above detection limits (averaging from 0 120 - 5 19 mg/kg) Other VOCs detected included carbon tetrachloride, 1,1-dichloroethane, 1,2-dichloroethane, and toluene.

Gem City Chemicals, Inc. is located at 1287 Air City Avenue in Dayton, Ohio Gem City Chemicals operations are primarily blending and distribution of chemicals. The plant occupies about 7 acres and is located about 200 yards east of the DTPP property boundaries. The B&O Railroad line separates the two sites According to the July, 1993 revision of the site assessment report prepared for Gem City Chemicals, Inc. by Q-Source Environmental Services, Inc. and on file with the State of Ohio EPA, the plant has operated at the site since 1969

Typical operations include the purchases of various chemical products in truck load quantities, the repackaging of chemicals into smaller containers, drums and tote tanks, and the resale of these smaller quantities of chemicals to industrial customers Both liquid and solid chemicals are handled and include: acids, solvents (including but not limited to toluene, xylene, freons, TCA, ethyl acetate, MEK, TCE, acetone, and naphtha), and other miscellaneous chemicals

Site assessments were conducted in 1987 and 1988 at Gem City Initial sampling included soil sampling at 12 locations in June, 1987, a soil gas survey at 40 locations in July, 1988, and groundwater sampling from 10 monitoring wells constructed in 1988 Soil sample tests at several locations detected 10 organic chemicals including: methylene chloride, PCE, TCE, TCA, methyl alcohol, isopropyl alcohol, acetone, toluene, xylene, and MEK. Soil gas survey results detected TCE, PCE, and TCA at a number of locations including samples taken near the B&O Railroad tracks to which the DTPP is contiguous. Groundwater monitoring well analysis was completed on a regular basis from 1988 - 1993 and the following has been detected acetone, benzene, chloroform, 1,1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene,

trans 1,2-dichloroethene, ethylbenzene, hexachlorobutane, PCE, toluene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, TCA, TCE, and vinyl chloride

Gem City Chemicals remediation project is ongoing and includes an air stripper system, groundwater recovery wells which were installed in 1987, and a soil vapor extraction system consisting of five soil vapor extraction wells. The soil vapor extraction system was shut down in 1991 and restarted for a brief period of time in 1992. Since no significant concentration of VOCs (≤5 ppm) were detected, the vacuum extraction wells were abandoned with removal of the blowers and filling the wells with grout.

3.3 DTPP Site Summary

Soils

The results of the investigation by Burlington indicated the soils were impacted by organics These include primarily TCE, TCA, PCE and some heavy metal contamination (chromium and lead) Based on soil gas results, the areas which may have been impacted by plant operations or other sources include

- Building 40B in the area which contained the former CFC-113 degreaser station.
- South side of Building 53 which contains the TCA storage tanks
- Buildings 40A and 40B which contained former parts degreasers.
- West and southwest section of the former Maxwell Complex or present Building 59
- Storage areas located east of Building 50

Groundwater

To summarize groundwater quality, there are 3 process cooling water wells on-site Well 1, located in Building 40, has been abandoned Well 2 is in the boiler house and is about 80 feet deep Well 3 is east of Building 50 and is about 135 feet deep

The wells were sampled by the State and DTPP several times between November 1989 and July 1990 The analytical results indicate that Well 2 contains the following.

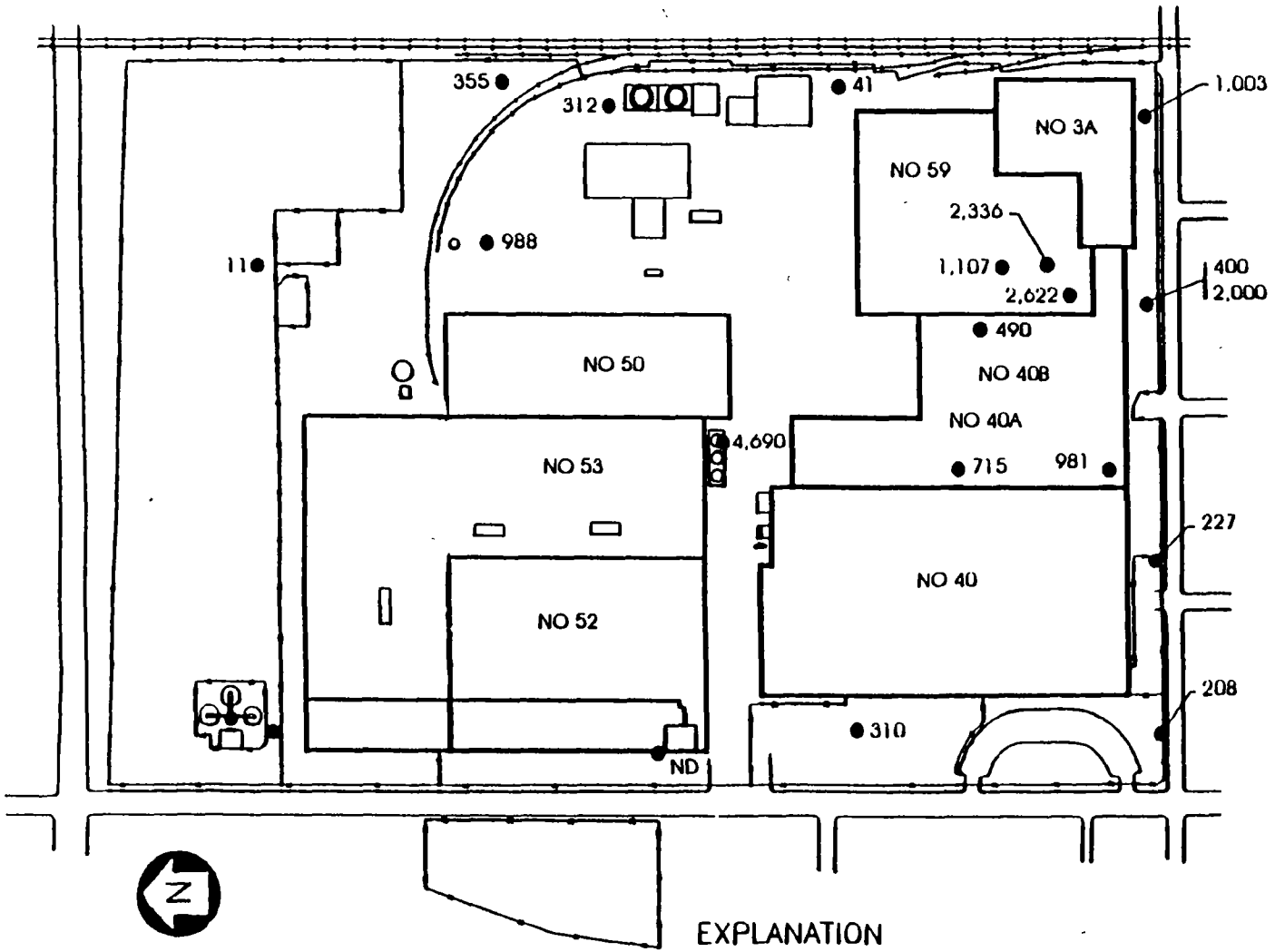
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Trans-1,2-Dichloroethene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- Trichloroethene
- Vinyl Chloride

Well 2 contained no regulated compounds. Additional groundwater samples were taken at the time soil gas was completed The samples were drawn through the soil gas probe and should not be considered representative samples. Figure 8 shows total VOCs found at that time The results indicated that groundwater may have been impacted near Buildings 40A, 40B, 59, and 53 More definitive groundwater studies should be completed

In summary, past plant activities may have impacted the soil and groundwater at the site. Due to the age of the plant and past plant uses (especially the Maxwell Complex, circa 1907), the variety of products manufactured over the years, much of the former history at the plant is not known. As stated in Section 2, most of the chlorinated solvent degreasing operations have been removed and/or replaced. The present and last TCA degreaser in Building 40A is scheduled for replacement with an aqueous washer in early 1994. The associated storage tanks outside Building 53 are also scheduled for removal in 1994 The CFC-113 degreaser in Building 40A is scheduled for replacement with a vacuum de-oiler with removal in mid-1994 The small CFC-113 engineering lab degreaser will be replaced as soon as an acceptable alternative is found, most probably in mid-1994

FIGURE 8

TOTAL VOCs IN GROUNDWATER
DAYTON THERMAL PRODUCTS PLANT



EXPLANATION

	APPROXIMATE RECON™ PROBE HOLE LOCATION
● 310	TOTAL VOC CONCENTRATION IN GROUNDWATER (ug/L)
ND	NOT DETECTED

Prior to considering further remediation, additional investigations must be performed to more fully characterize the site. In addition, it is possible that DTPP may have been impacted by two nearby facilities. They are DAP and Gem City Chemicals, Inc A better understanding of the DTPP site will be possible after groundwater quality and direction are determined.

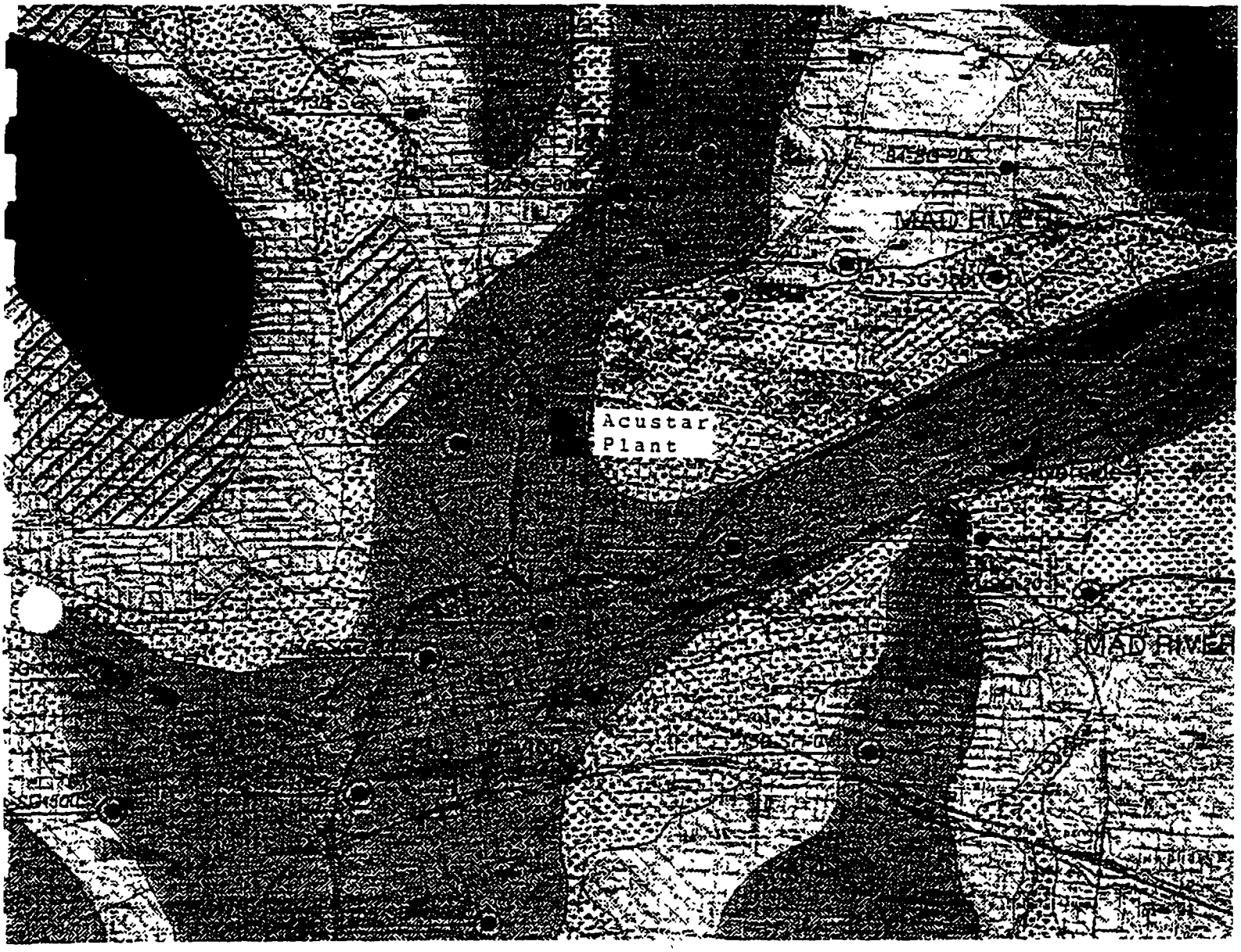
SECTION 4.0 - GEOLOGIC & HYDROGEOLOGIC CHARACTERIZATION

4.1 Regional Geomorphology

The Dayton area is located in the central lowland and physiographic province which is primarily drained by the Miami River and its tributaries (USGS-1966). The Dayton plant is located on a flat topped terrace which is an erosional remnant from the outwash of the Mad River (see Figure 9). This glacial outwash gravel unit stretches northward to Urbana and southward to the Miami River. The surface materials of these types of outwashes consist of coarse sand and gravel, although other sediment types may be present. In some areas of the Mad River outwash, windblow losses which contains silt has been noted. The terrace is bordered on the north, west, and south by the flood plains of the Miami and Mad Rivers Flood plain sediments are about 20 feet thick. The top of the moraine is present north-east of the site in Mad River Township. The moraine was mapped as a thin to thick layer of till overlaying sand and gravel by Goldthwait (Norris, Cross, Goldthwait, 1948) and by Forsyth (Norris & Spiker, 1966)

4.2 Regional Stratigraphic Units

There have been regional studies completed by Norris & Spiker (1966) which confirm that the uppermost unconsolidated unit consists of an outwash deposit up to 80 feet thick The outwash deposit contains primarily sand and gravel Discontinuous till lenses have been encountered in some wells in the vicinity of the Dayton site. Published studies by Norris & Spiker (1966) indicate that the till layer may be discontinuous on a regional scale These reports suggest that at some locations the till is a thick massive unit while at other locations it has been logged as stratified with sand and gravel. The location of this till layer becomes important when attempting to determine the direction and rate of regional groundwater flow A continuous layer of till was noted in the geologic cross-section of Gem City Chemicals which borders DTPP along Air street The layer was observed from 80 - 100 feet below grade



Well Yields

AREAS IN WHICH YIELDS OF MORE THAN 500 TO 1000 OR MORE GALLONS PER MINUTE MAY BE DEVELOPED

Permeable sand and gravel deposits beneath the floodplains of the Mad and Miami Rivers. Properly constructed large diameter drilled wells yield in excess of 1000 gallons per minute at depths ranging from 75 feet to as much as 125 feet.

AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED

Regionally extensive thick permeable deposits of sand and gravel may yield as much as 500 gallons per minute. Extensive areas may be recommended to locate coarse deposits at average depths of 75 feet.

AREAS IN WHICH YIELDS OF 20 TO 100 GALLONS PER MINUTE MAY BE DEVELOPED

Water-bearing deposits of fine sand and sand and gravel overlain by thick layers of clayey till. Wells in these deposits may yield as much as 100 gallons per minute. Deep wells usually developed in these areas.

AREAS IN WHICH YIELDS OF 5 TO 20 GALLONS PER MINUTE MAY BE DEVELOPED

Ground water obtained from thin, not extensive sand and gravel deposits interbedded with relatively thick layers of clayey till. Wells are usually developed at depths of less than 125 feet and deeper drilling into the underlying bedrock may be non-productive.

AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED

Average yields for wells developed in basal Silurian limestone bedrock ranges from 4 to 8 gallons per minute. Drilling deeper than 80 feet is not advisable owing to the presence of the non-water-bearing Ordovician shaly limestone bedrock. Cisterns and/or storage may be necessary for peak periods of water demand.

Relatively thick consolidated deposits of silty sand and clayey till. Thin layers of water-bearing sand and gravel may be encountered at depths ranging from [illegible] feet. Drilling advisable. Cannot be developed [illegible].

AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED

Clayey till [illegible] water-bearing zones [illegible] sandy [illegible] and [illegible]

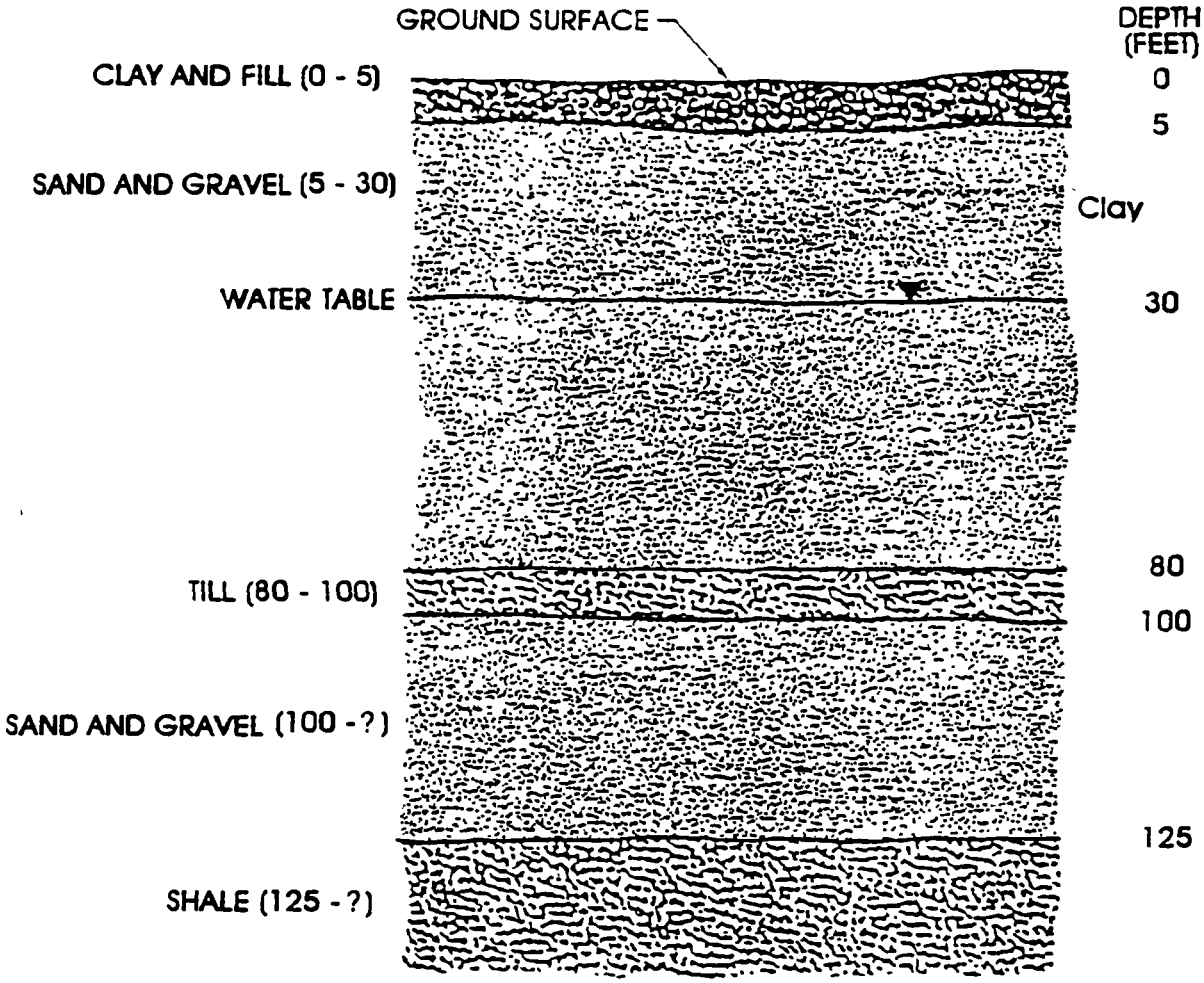
A second aquifer unit was noted under the till in regional studies. The till layer is composed of fine to medium sand, sand and gravel and fine to coarse gravel (NEARBI Site Investigation) Gem City Chemicals, Inc. has drilled a total of twenty-four test borings throughout their facility Boring logs are contained in the Site Assessment Report prepared by Q-Source Environmental Services, Inc dated July 28, 1993. The logs suggest that the surface material at the site is about 80 - 90 feet thick. Surface materials consist of coarse to fine sand and gravel. Below this surface material is a continuous layer of dense till consisting primarily of silt. A thin clay or silt layer was also encountered near the surface at a depth of about 15 feet. Based on these borings for Gem City Chemicals, the following was noted:

- The surface materials consist of a thin disturbed layer of fine-grained loess, coal fragments, and fill material.
- The next layer consists of a sand and gravel deposit The material contains medium to coarse sand and small pebbles with interstitial fine sands and silt. The thickness of this layer is about 20 feet.
- Another layer of fine sand or silt was encountered at 20 feet This silty-clay layer was observed in the test borings and in monitoring wells known as the MW-5 cluster and RW-1. It varies in thickness from 6 inches to 2 feet
- The next well defined unit from about 20 feet to the bottom of the uppermost aquifer consists of outwash deposit material This is composed of interbedded coarse sand to granules with traces of pebbles and silt
- At a depth of 82 feet a dense layer of silt was encountered (Boring P-4) This unit consists of dark gray silt, with fine to coarse sand and trace pebbles

The information prepared for Gem City is in agreement with other regional reports on the stratigraphy of the area (See Figure 10 for conceptual stratigraphy for DTPP)

FIGURE 10

CONCEPTUAL STRATIGRAPHY
DAYTON THERMAL PRODUCTS PLANT



4.3 Site Hydrology

Several reports were evaluated to determine the regional as well as local direction of groundwater flow Reports by Norris & Spiker and CH_2M Hill established that regional flow was towards the southwest, parallel to the Miami South Wellfield.

According to other published reports, flow direction has changed to the north following the installation of the City of Dayton's Miami South Well Field in the early 1960's. The groundwater flow divide originally located north of Gem City Chemical has shifted to the south. This has changed groundwater flow at the plant to the north-east. The gradient across Gem City Chemical is flat and any changes or alterations to the pumping of the Miami South Well Field will likely alter the flow of groundwater Also, another factor which may shift groundwater flow direction is the amount of recharge to the aquifer Measurements taken at Gem City Chemical indicate that the elevation of the groundwater to the surface has varied by about 12 feet reaching a high of 730 MSL in 1991 and a low of slightly over 718 feet in February, 1992 This is a result of a normal water cycle in which there is a rising groundwater table during the winter and spring and a falling groundwater table during the summer and fall A review of the potentiometric surface measurements however indicated that at the Gem City Chemical site, variations in recharge do not appear to affect the general direction of groundwater flow It has been shown, however, to affect the overall elevation of the groundwater table and the associated saturated thickness of the aquifer.

At the Gem City Chemical site one of the most important factors affecting groundwater movement is the presence of a recovery well system in the center of the site which pumps at approximately 300 gallons per minute (gpm) This recovery well has created a cone of depression at the Gem City Chemical site (see Figure 11)

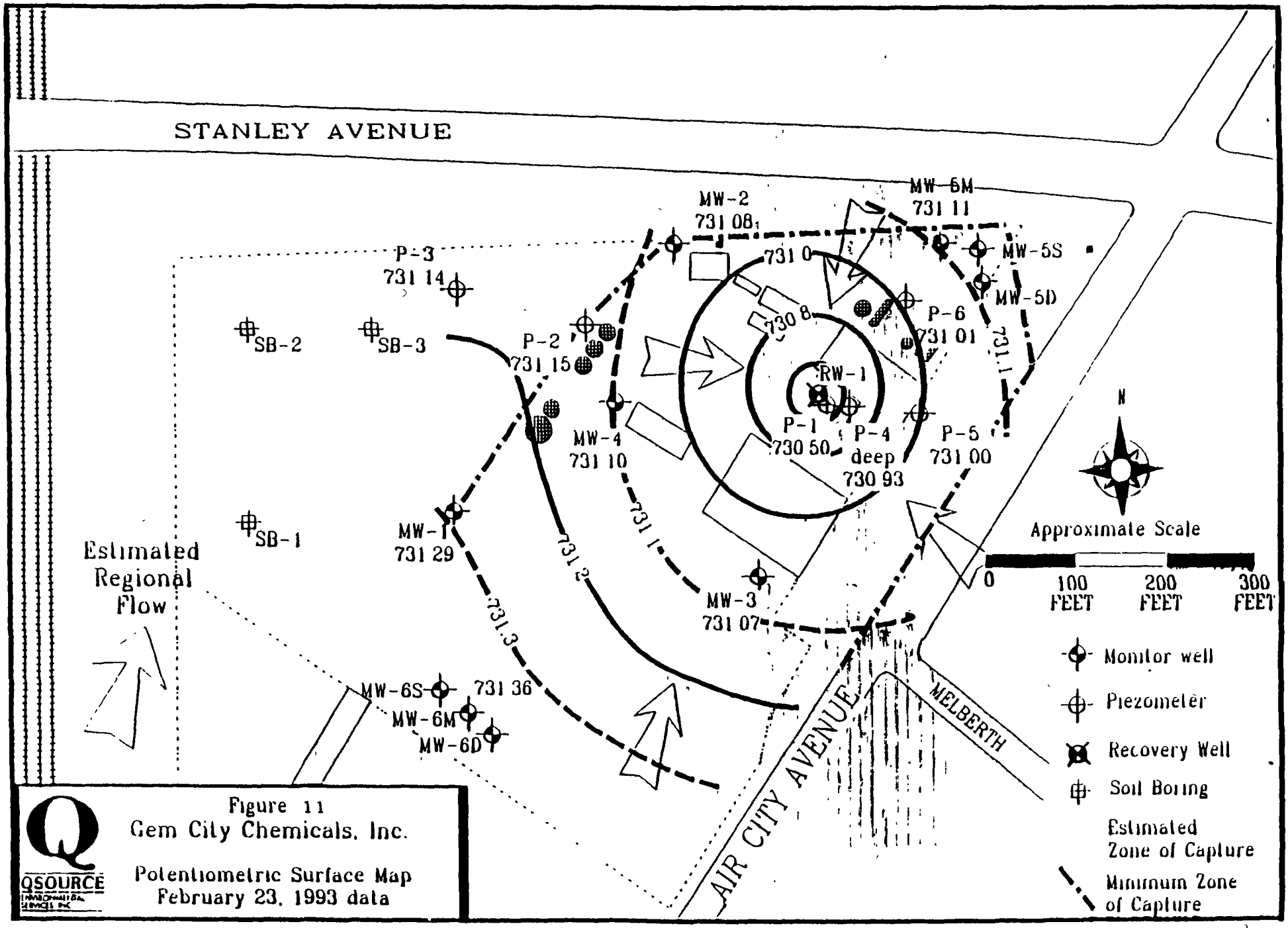


Figure 11
Gem City Chemicals, Inc.

Potentiometric Surface Map
February 23, 1993 data

QSOURCE

4.4 Aquifer Characteristics

The hydraulic conductivity of the shallow aquifer is approximately 200 feet per day Using an estimated saturated thickness of the shallow aquifer of 30 to 80 feet, the transmissivity of the aquifer is approximately 15,00 to 40,000 square feet per day (Q-Source -1989)

Studies completed by Dames & Moore in 1991 for the DAP site which is located about 4 miles north of this site, included an aquifer recovery test which monitored drawdown in the monitoring wells and piezometers surrounding the pumping well. Transmissivity values were calculated from the recovery results and were in the range of 249,000 gallons per day per foot to 747,000 gallons per day per foot. The transmissivity appears to generally be lowest in the shallow part of the aquifer and it increases with depth.

The lithology of the deep aquifer is very similar to the shallow aquifer Based on reports prepared for Gem City Chemicals, it appears to be irregular The saturated thickness of the deep aquifer is approximately 60 feet thick

The deep aquifer contains a significant amount of silt which has impacted its hydraulic conductivity Groundwater in the deep aquifer is under semi-confined conditions. Hydraulic conductivity values for the deep aquifer range from 140 - 200 feet per day Reported transmissivity ranges from 1,200 - 12,000 square feet per day. A storage coefficient of 0 001 is within the expected range for a confined aquifer.

Values for the aquifer parameters developed by CH_2M Hill in 1972 for the development of the Miami South Well Field were:

Upper Aquifer

Hydraulic Conductivity - 0 003 ft/sec (260 ft/day, 2021 GPD/ft^2)

Storativity	-	0 2 ft/ft

Till Layers

Hydraulic Conductivity	-	0 44 x 10^{-6} ft/sec (0 04 ft/day, 0 3 GPD/ft²)
Storativity	-	0 ft/ft

Lower Aquifer

Hydraulic Conductivity	-	0 001 ft/sec (87 ft/day, 710 GPD/ft²)
Storativity	-	0 00001 ft/ft

This model assumed a 50 foot thick saturated zone in the upper aquifer, and variable thicknesses for the till and lower aquifer. The transmissivity values were not calculated directly. All values were calculated assuming that each of the layers within the model are homogeneous and isotropic Due to the directions of flow that are calculated from this model, the calculated hydraulic conductivities are likely to reflect the horizontal conductivity in the "upper" and "lower" aquifers, and the vertical conductivity through the till Considerable local variability from these values is likely across the region

During the pump test conducted at Gem City Chemicals, Inc on February 21, 1990, the recovery well was pumped at a rate of 340 GPM and the water level in the piezometer installed 3 5 feet away from the pumping well was monitored. The drawdown was 0 75 feet after 450 minutes of pumping. This gives a value for transmissivity of 52,900 square feet per day or 395,000 gallons per day per feet and conductivity of 0 226 centimeters per second (755 ft/day). This value is about three times the average value calculated from the model studies The effective porosity of the silty sands and gravels found in the Dayton area is estimated to be 20 percent The storativity is estimated to be 0 10 to 0 20, based on the estimated effective porosity

Based on these values, the pre-pumping groundwater flow velocity is estimated to be about 1 2 feet per day The current flow velocity in the area surrounding the pumping well is estimated to be 6 4 feet per day The potentiometric surface elevations have been measured in the two well clusters located at the northeast and southwestern limits of Gem City Chemicals, Inc. The levels measured in the three wells in each cluster are similar, which indicated that the groundwater flow is nearly level at both locations

Due to the presence of the till layer separating the valley fill deposits into "upper" and "lower" aquifer systems, the direction of groundwater flow was evaluated separately at Gem City Chemicals for each of the two layers As described previously, a low-permeability till layer is present beneath Gem City Chemicals, Inc. and for at least one-half mile surrounding the site This till layer effectively isolates the uppermost, unconfined aquifer at Gem City Chemicals, Inc. from any deeper, confined aquifers that may be present

Ground-water flow directions in the lower aquifer have changed considerably during the past thirty years, due to changes in water usage in the surrounding areas Potentiometric maps compiled by Norris & Spiker (1966) for 1959 and 1960 (prior to the time when the Miami South Wellfield began operations) show groundwater flow to the southwest, towards a wide cone of depression developed beneath the central business district of Dayton, and also towards industrial facility water supply wells to the southwest A major cone of depression had developed beneath the Miami South Wellfield following the beginning of production of water from the wellfield, in the early 1960's. Maps compiled by CH_2M Hill for 1972 and for 1986 show this cone of depression The location of Gem City Chemicals, Inc appears to be on or near a divide between these two cones of depression, and the direction of groundwater flow at the site could be either to the north or to the south, or it could fluctuate depending on recharge variations and variability in the pumping rates at the city's wellfield

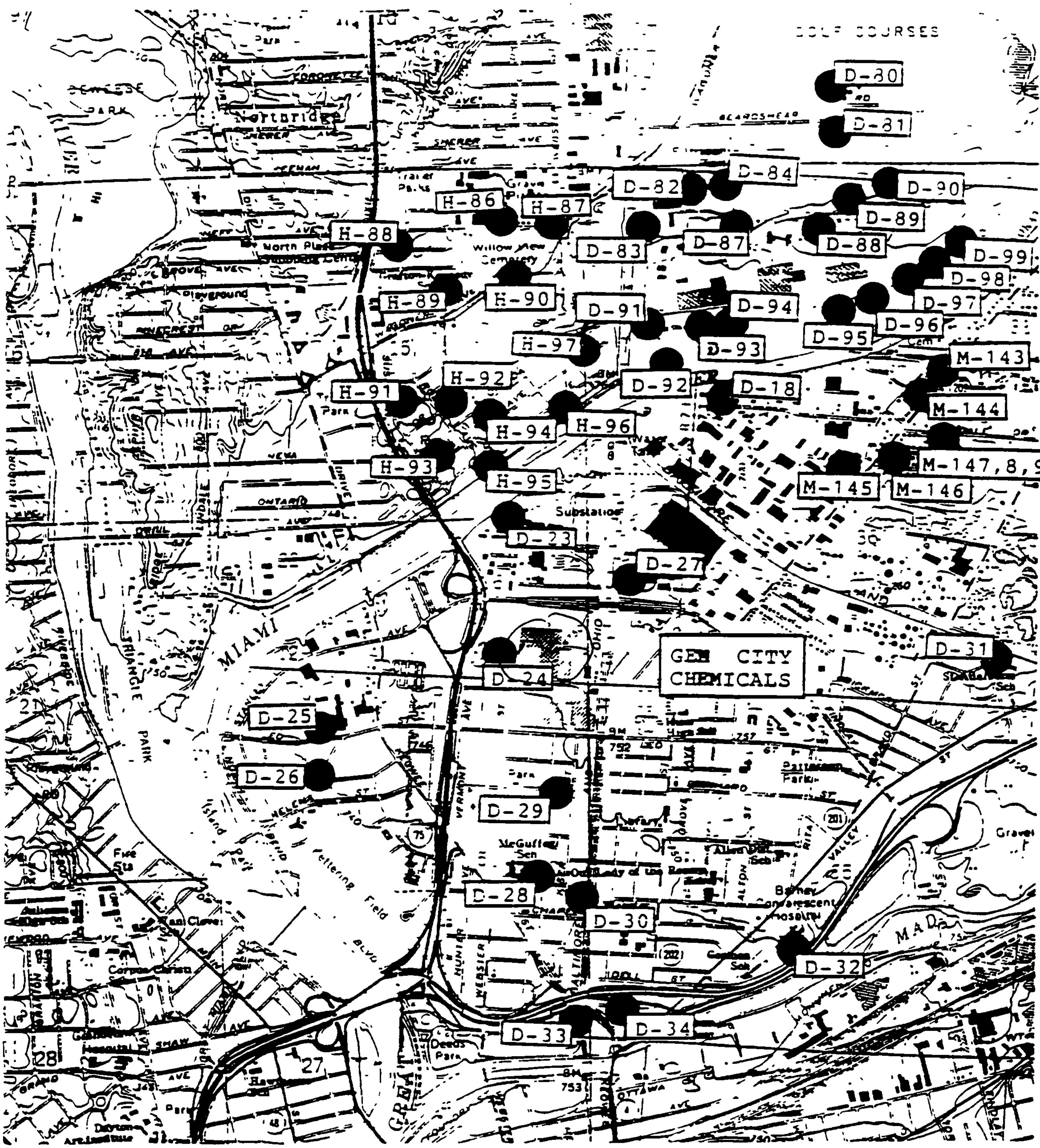
4.5 Local Groundwater Use

The most prominent local user of groundwater is the Miami River Well Field owned by the City of Dayton. It is located north of the Dayton plant across the Great Miami River It contains 22 production wells (Geotrans, 1986).

Other water supply wells in the vicinity of the plant site are shown in Figure 12. Available driller logs are contained in Attachment 1. These logs indicate that most of the local wells are located at depths of 30 to 65 feet.

In August of 1988, the City of Dayton adapted a Well Field Protection Program to protect its well field and drinking water supplies. The southern limit of the Miami Well Field Protection Overly District is Stanley Avenue. Well yields for wells within the area as published in Norris & Spiker (1966) range from 20 gallons per minute (No 209) to a maximum of 1,000 gallons per minute (No. 212). A test well in the Miami South Well Field pumped at a rate of 2,283 gallons per minute. The City's Mad River Well Field is approximately two miles to the east of the site and does not receive any recharge from this area as reported by Q-Source for Gem City Figure 13 indicates the extent of the wellfield protection district

FIGURE 12

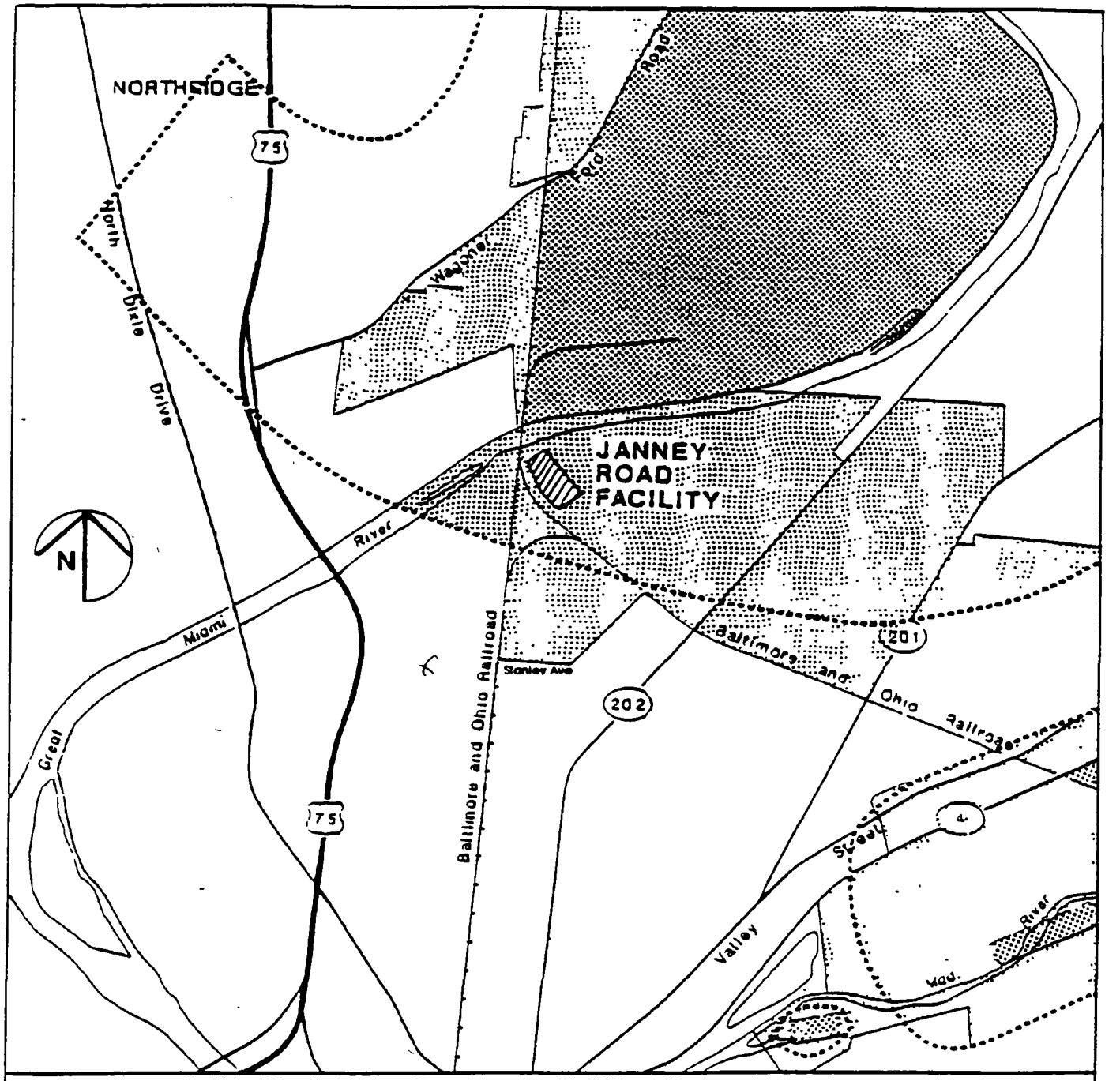


Gem City Chemicals

Water Well Locations

ODNR

QSOURCE



Applied Geotechnology Inc
Geotechnical Engineering
Geology & Hydrogeology

GROUNDWATER PROTECTION DISTRICTS

OAP Inc.
Janney Road Facility

FIGURE 13

14 937 011 KER 16 September 88

SECTION 5.0 REMEDIATION OBJECTIVES

5.1 Ohio EPA Policy

The Ohio Environmental Protection Agency Division of Emergency and Remedial Response (DERR) has developed guidance for hazardous waste site investigations and remediation programs Ohio EPA evaluates every site independently and will not provide generic clean-up guidance or criteria. The policy was originally developed for unregulated hazardous waste sites but is used at Ohio EPA in the Remedial Response Program.

The process begins with determination of site contamination. A site is considered to be hazardous if a contaminant is detected as defined under Ohio Revised Code (ORC) 3734 02 and the contaminants are present on-site at concentrations significantly above background or the contaminants are present on-site and are not detected in representative background samples.

Once it has been determined that contamination exists, it must be determined if contamination poses a threat to public health or the environment. Ohio EPA has not developed specific action levels for chemical contaminants Instead, a human health risk assessment must be performed to evaluate health effects caused by site specific contamination.

After site contamination has been characterized and risks posed by the contamination established, remedial alternatives can then be developed and evaluated The criteria that Ohio EPA follows is that the alternatives must consider the following

1 Overall protection of human health and the environment;

2 Compliance with applicable or relevant and appropriate standards and/or criteria;

3 Long term effectiveness and permanence;

4 Reduction of toxicity, mobility, or volume through treatment;

5 Short term effectiveness,

6 Implementability;

7 Cost;

8 Community acceptance

Alternatives should establish remediation goals that meet the criteria outlined. Based on these preliminary findings, the risk assessment should focus on groundwater quality issues since the site is near the North Miami drinking water aquifer The selected remedy must comply with all known Federal and State applicable or relevant and appropriate standards and/or criteria (ARARs) The following section discusses ARARs and their significance.

5.2 ARARs

In the evaluation of potentially applicable technologies to remediate DTPP, various technologies must be evaluated based on implementability and cost effectiveness Before treatment technologies can be selected, however, the applicable or relevant and appropriate requirements (ARARs) must be reviewed. The ARARs that must be reviewed include the following.

- Any applicable or relevant and appropriate standards, requirement, criteria, or limitation under Federal law
- Any promulgated applicable or relevant and appropriate standard, requirement or limitation under State law that is more stringent than the Federal requirement

"Applicable" requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal/State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, or location Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be applicable

"Relevant and appropriate" requirements are those cleanup standards, standards of control, or other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, or location, do address problems or situations sufficiently similar to those encountered that their use is well-suited to the particular site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

Additional information that does not meet the definition of potential ARARs may also be considered in determining the necessary level of cleanup for protection of human health or the environment This "other information to be considered" (TBCs) includes criteria, advisories, or guidance developed by EPA, other Federal agencies, or States to assist in the determination of, for example, health-based levels for a particular contaminant for which there are no ARARs, or the appropriate method for conducting an action Included in this category are health effects, information with a high degree of credibility, and technical information on how to perform or evaluate site investigations or remedial actions, and policy

ARARs are grouped into three broad categories. These categories are as follows:

- Chemical Specific - These are health or risk based numbers that guide site cleanup and they may be based on actual concentration levels
- Location Specific - This would include requirements for site sensitive features such as wetlands, well head protection areas, flood plains, etc.
- Action Specific - These ARARs pertain to monitoring requirements, manifesting requirements, etc.

Once the contaminants and the concentrations are known at the site, the following Federal and State contaminant specific ARARs should be reviewed

EPA Primary and Secondary Drinking Water Regulations - These regulations were developed as part of Section 1412 of the Safe Drinking Water Regulations. It establishes enforceable maximum contaminant levels (MCLs) and non-enforceable maximum contaminant levels goals (MCLGs). EPA has also promulgated National Secondary Drinking Water Regulations which establish secondary MCLs which primarily affect the odor or appearance of drinking water

EPA AWQC - This criteria is not legally enforceable but can be used by the states to protect human health from exposure to contaminants from ingestion of aquatic life. It also protects freshwater and aquatic life.

Other ARARs which need to be reviewed to determine if they are relevant to the remedial technologies chosen include:

- Clean Air Act - Three categories: NAAQS, National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and New Source Performance Standards (NSPS) 40 CFR Part 60
- Health Effects Assessment
- State of Ohio Surface Water Quality Standards
- RCRA Subtitle C - This may be applicable to materials generated as a by-product of treatment.
- Location Specific ARARs - Should be reviewed including criteria on the Miami Well Field area.
- State of Ohio Drinking Water Standards
- State of Ohio Air Pollution Regulations

Other ARARs which were identified but which are not relevant to this site included

- DOT Rules for Hazardous Materials Transport - Only applies if waste is shipped off-site for analysis, treatment or ultimate disposal.
- RCRA "Land Ban" Disposal Restriction (40 CFR Part 268) - Restricts certain hazardous wastes from being placed or disposed on land unless certain treatment standards are met. Excavation and disposal of certain hazardous wastes will be subjected to LDRs.
- Standards for Owners or Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (40 CFR Part 264) - These standards only apply to TSDFs if certain types of remedial actions are completed on-site and it applies to off-site facilities that receive hazardous waste for treatment and/or disposal.
- Endangered Species Act of 1978 (16 USC 1531 - 40 CFR Part 502) - This act ensures that an endangered or threatened species is not affected adversely in its habitat. No federally listed endangered or threatened species are located on this site.
- CWA 1977 Section 404 - This section prohibits the discharge of fill material into jurisdictional wetlands without obtaining a permit from the U.S. Army Corps of Engineers. No discharge into wetlands is permitted if an alternative exists for the proposed project. Regulations, guidelines, and permit requirements have been established to prevent unregulated dredging, dumping, filling, and similar activities that would destroy these sensitive habitats

SECTION 6.0 - RECOMMENDATIONS

6.1 Overall Recommendations

After a thorough review of on-site and off-site data, it was determined that the following activities/tasks should be completed to fully characterize the site

- Evaluate subsurface conditions and the vertical stratigraphy of the site. Include both the upper and lower aquifers. A sufficient number of borings should be completed to adequately determine if the first aquifer is a confining or semi-confining layer.
- Establish groundwater flow in the water table and lower aquifer Local data obtained from Gem City Chemicals indicates that groundwater flow has been significantly affected by the pumping of the Greater Miami Wellfield This should be confirmed.
- Several shallow (less than 50 feet) and deep (approximately 100 feet) boreholes should be completed to fully evaluate stratigraphy using split-spoon sampling Selected boreholes should be completed as monitoring wells.
- Evaluate the groundwater quality of the two aquifers including priority pollutants Conduct pump tests on selected wells to determine if any of the installed wells can later be converted to a groundwater recovery well system
- Halogenated organic compounds were found during the site investigation of the Maxwell Complex and are characterized as DNAPLs or Dense Non-Aqueous Phase Liquids. The heavier-than-water compounds can sink in an aquifer system and migrate downslope as a separate, non-aqueous phase displacing water at they migrate. Residual DNAPL can remain within the vadose and saturated zones, trapped by surface tension within soil pore spaces The compounds will typically continue to migrate vertically until they become deposited in pore spaces or until they reach a less permeable layer, such as a till or clay If the impermeable layer is sufficiently sloped, DNAPLs may "pool" in depressions

DNAPLs can migrate in directions other than the direction of groundwater flow DNAPLs in the vadose zone dissolve into the water and vaporize into soil gas. Therefore, since the site may contain compounds which includes DNAPLs, the following should be evaluated at the site:

1. Determine DNAPL concentrations of compounds which may be as low as 1% saturation of a certain DNAPLs solubility
2. Determine the presence of dissolved phase chemicals upgradient.
3. Confirm through analysis soil gas data which indicates "hot spots"

- Develop remedial alternatives which should include an evaluation of combinations of treatment technologies such as soil vacuum extraction, groundwater pumping and treatment, stream injection, bioremediation, and soil flushing.
- The nearby Gem City Chemicals, Inc site has a recovery well system and an air stripper to recover DNAPLs. Studies at this site concluded that there was no separate phase caused by DNAPLs beneath Gem City Chemicals, Inc The concentrations measured at the site and the solubility of the chlorinated compounds were compared. It appears that the concentrations found at Gem City are below maximum solubilities of these compounds which would indicate that the compounds are dissolved and are moving with the groundwater and not migrating as a separate phase In addition, the concentrations of solvents found in the monitoring wells were highest at the shallow depths and are near non-detect at the bottom of the aquifer. It appears that the DNAPLs are traveling with the direction of groundwater flow which would be away from DTPP In order to confirm this, wells should be installed near the property boundary between Gem City and DTPP

The following section outlines the preparation of a plan to implement installation of monitoring wells and soil borings to characterize the site

6.2 Field Sampling Plan (FSP) Outline

The primary purpose of the soil boring program is to characterize the site's geology and to obtain samples for geotechnical analysis. The FSP also provides the sampling rationale, procedures, and deliverables to be used in the implementation of field sampling activities The FSP will include the following items:

a) One or more maps depicting proposed sampling locations A site survey map should also be completed which will be prepared at 1 inch equals 20 feet. Vertical control will be referenced to the National Geologic Vertical Datum (NGVD) Horizontal control will be referenced to the Ohio State Plane Coordinate System.

b) A detailed description of all sampling, analysis, testing and monitoring to be performed including sampling methods, analytical and testing methods, and frequency of sampling and sampling locations.

c) An analysis of Data Quality Objectives (DQOs) describing how the sampling, analysis, testing and monitoring will produce data useful for meeting the objectives of remediating the site

d) A schedule for performance of specific sampling and testing tasks.

e) A description of geophysical investigations to better define subsurface conditions applicable to characterize the subsurface.

Other items to be addressed include

- Inspection of the work,
- Daily documentation logging;
- As-built drawings,
- Health & Safety Plan, site specific,
- Coordination of activities

All drilling activities will be completed using a 4¼" ID hollow stem auger with split-spoon sampling continuously at 2 foot intervals until the lower confining unit is reached. A geologic cross section will be prepared. All soil cuttings will be field screened for organic vapors

Large diameter (3 inch) spilt-spoons will be used for the collection of samples for geotechnical laboratory tests. Blow counts will be recorded and standard penetration noted. Grain size analysis should be performed as required using ASTM 422. Moisture content using ASTM Method 2216 and Atterberg limit tests should be performed in conjunction with the grain-size analysis.

Quality Assurance Plan:

Where appropriate, analysis will be performed in accordance with EPA methods and procedures. The following items should be included in each analytical report

- Title Page,
- Table of Contents;
- QA Objectives;
- Sampling Procedures;
- Sample Custody;
- Calibration Procedures and Frequency;
- Analytical Procedures;
- Data Reduction, Validating and Reporting;
- Quality Assurance Reports.

After the borings have been logged and completed, several will be converted to monitoring wells with five foot stainless steel screens Screen locations will be selected by the driller based on results of the boring program and groundwater sampling

Attachment 1
Well Logs

WELL LOG AND DRILLING REPORT

State of Ohio
OHIO WATER RESOURCES BOARD
Department of Public Works
553 E. Broad St., Columbus 15, Ohio

No. 62814

County Montgomery Township Harrison Section of Township or Lot Number 2619 Koebbe

Owner Lilian Jones Address 2619 Koebbe ave

Location of property North Ridge Dayton, O

CONSTRUCTION DETAILS

Casing diameter 4 1/2" Length of casing 36'

Type of screen ____ Length of screen ____

Type of pump Air Lift

Capacity of pump 10 GPM

Depth of pump setting ____

PUMPING TEST

Pumping rate ____ G.P.M. Duration of test ____ hr.

Drawdown ____ ft. Date ____

Developed capacity ____

Static level of completed well ____ ft.

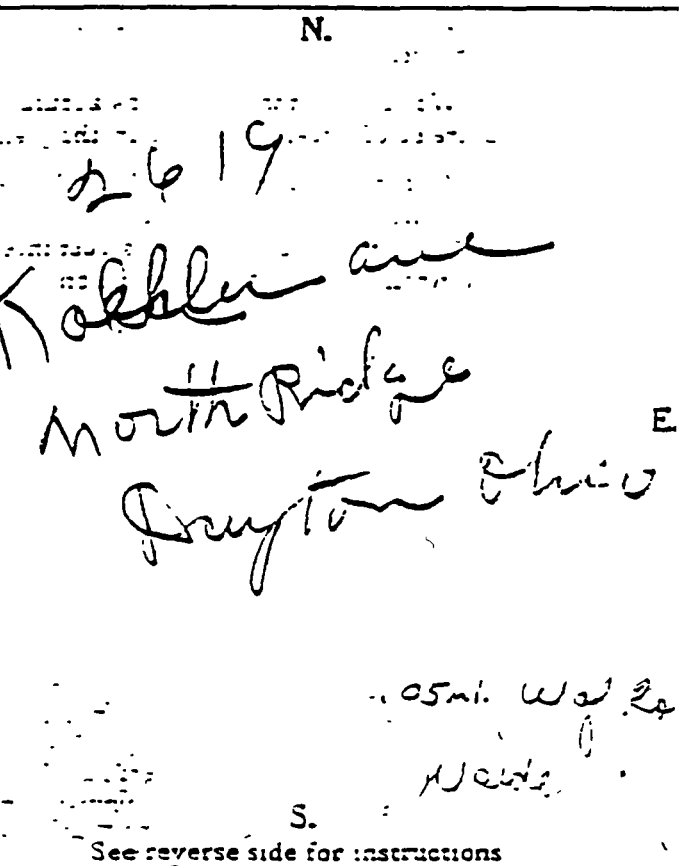
Pump installed by ____

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top Soil	0 Feet	3 Ft.
Gravel & Sand	3	34
water Gravel	34	36
10 ft water		
Dug Tube at 34 ft		
5 G.P.M.		
Developed		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm EARL ECKLANDSWORTH Well Drilling

Address 2535 Home Avenue - North Riverside DAYTON, OHIO

Date Sept 3-49

Signed Earl Ecklandsworth

WELL LOG AND DRILLING REPORT

State of Ohio

OHIO WATER RESOURCES BOARD

Department of Public Works

553 E. Broad St., Columbus 15, Ohio

No. 48551

County Montgomery Township Harrison Twp. Section of Township or Lot Number

Owner Leonard Dluhy Address 4612 Ross

Location of property ½ mi E from State Rout 25

CONSTRUCTION DETAILS

Casing diameter Five Length of casing 36½

Type of screen Length of screen

Type of pump Jet

Capacity of pump 300 gal per hr

Depth of pump setting 35 ft 1st from top & Ground

PUMPING TEST

Pumping rate 10 G.P.M. Duration of test 4 hr

Drawdown 22 ft. Date June 4 19

Developed capacity Not Known

Static level of completed well 25 ft.

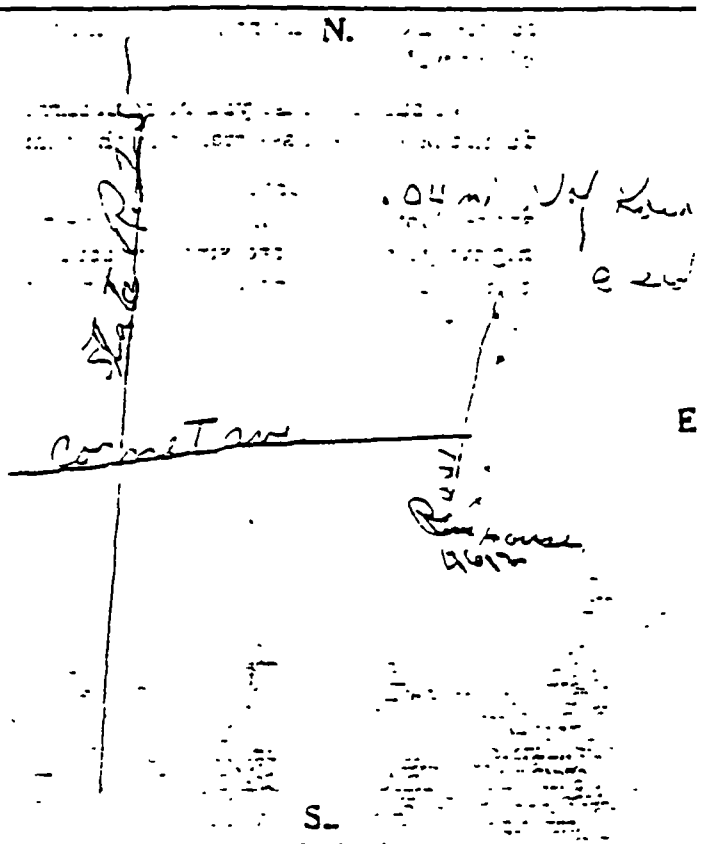
Pump installed by Owner

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 Feet	~~Fifty~~ Ft.
Soil		
Sand	2½	41
gravel	41	43½

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm R W Nye + Earl Fry Date June 4 1962

Address [illegible] Signed Earl Fry

WELL LOG AND DRILLING REPORT

1-1,528,200 (4000 Y004)
659,703-S

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

ORIGI
39
No. 109299

County Montgomery Township Harrison Section of Township or Lot Number north East T

Owner Herman Meerhoff Address 2817 Koehler Ave

Location of property 1/2 mi north Traffic circle 1/2 mi Ea
SW & E north Ridge

CONSTRUCTION DETAILS

Casing diameter 6 5/8" Length of casing 32'
Type of screen None Length of screen
Type of pump None
Capacity of pump
Depth of pump setting

PUMPING TEST

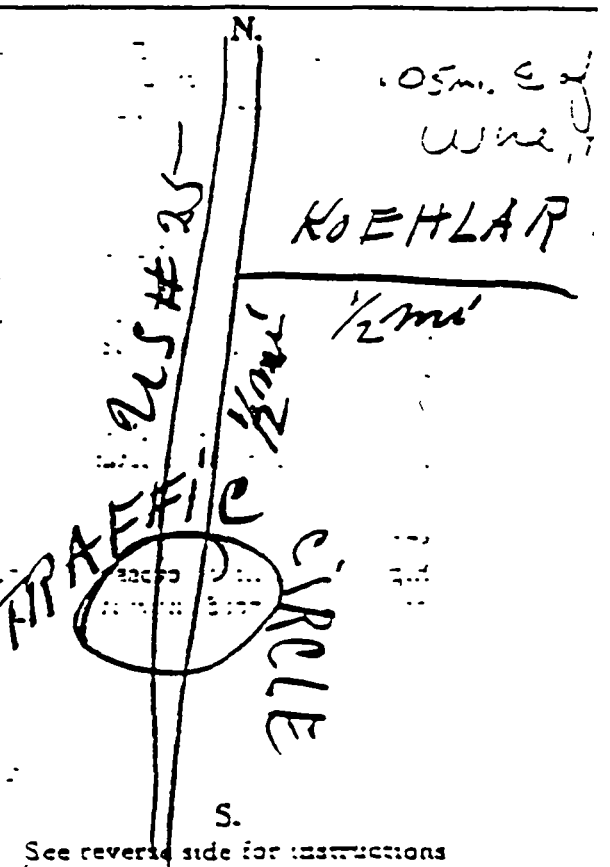
Pumping rate 3 G.P.M. Duration of test 2
Drawdown None ft. Date 9-17-5
Developed capacity 216 gal P
Static level—depth to water 21
Pump installed by owner

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
gravel	0 Feet	32 Ft.
11 ft standing water no drawdown		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



DAVID L. SULLIVAN
REDRUCO WATER WELL DRILLING
PUMPS INSTALLED
4917 Woodland Hills Blvd.
Dayton, Ohio
All Work Guaranteed TA 3684

See reverse side for instructions

Drilling Firm David Sullivan Date Sept 17-1953
Address 4917 woodland Hills Blvd Signed David L. Sullivan

-1,526,000
(500 x 500)
664,800 - S

WELL LOG AND DRILLING REPORT

State of Ohio

OHIO WATER RESOURCES BOARD

Department of Public Works

553 E. Broad St., Columbus 15, Ohio

No. 49181

County Montgomery Township Harrison Section of Township or Lot Number

Owner Ray Smart Address 2711 Sheron Av

Location of property 1 mile South of Needmore Rd. and ½ mile East of RT 25

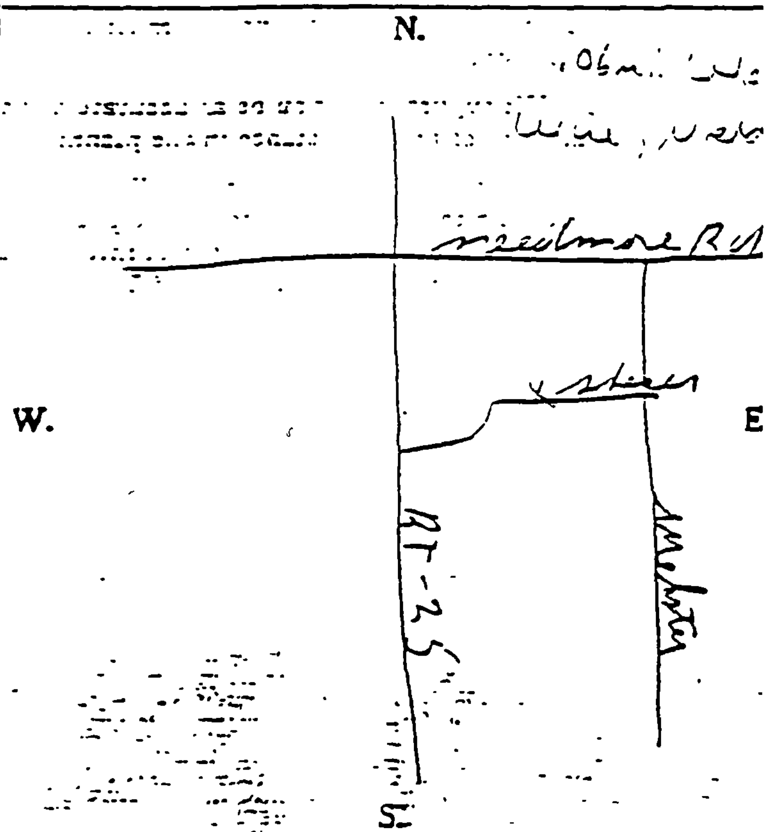
CONSTRUCTION DETAILS		PUMPING TEST	
Casing diameter 6"	Length of casing 89	Pumping rate G.P.M.	Duration of test h
Type of screen	Length of screen	Drawdown 5 ft.	Date
Type of pump Jet		Developed capacity ... gallons Hr.	
Capacity of pump		Static level of completed well 34 ft.	
Depth of pump setting		Pump installed by R. B. Billman Co	

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
fill	0 Feet	6 Ft.
dry gravel	6	47
Hardpan	47	55
clay & gravel	55	60
fine sand	60	75
Hardpan	75	77
muddy sand	77	83
Hardpan	83	85
water bearing sand & gravel	85	89

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm M. U. Scott Date 9-6-54

Address R.R. 3 Box 214-B Dayton, O. Signed M. U. Scott

WELL LOG AND DRILLING REPORT

ORIGI

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 129071

County Montgomery Township Harrison Section of Township or Lot Number

Owner Wilbert Winston Address 1404 Ross Ave.

Location of property North on Super High Way East on Kerman Ave 2 Blocks on Ross

CONSTRUCTION DETAILS

Casing diameter 4" Length of casing 47 Ft.
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

PUMPING TEST

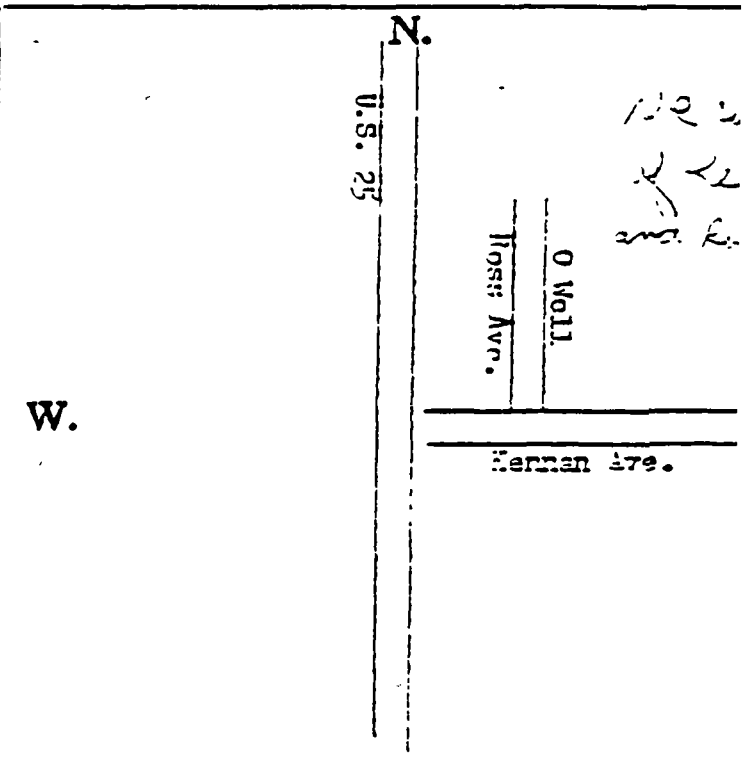
Pumping rate G.P.M. Duration of test
Drawdown ft. Date April 29 1954
Developed capacity
Static level—depth to water 28
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
ry Gravel	0 Feet	30 Ft.
Gravel & Water	30 "	47 "

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc



See reverse side for instructions

Drilling Firm EARL HOLLANDSWORTH Well Drilling
Address 1515 Cleo Avenue · North Ridge DAYTON, OHIO

Date April 29 1954
Signed Earl Hollandsworth

WELL LOG AND DRILLING REPORT

ORIGIN

PLEASE USE PENCIL OR TYPEWRITER DO NOT USE INK

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus 12, Ohio

No. 300566

County Montgomery Township Madison Section or Township Northwest

Owner Howard Wick Address 2615 Neff Rd. Dayton O

Location of property 2615 Neff Rd Dayton Ohio

CONSTRUCTION DETAILS

Casing diameter 5 5/8 Length of casing 63'

Type of screen None Length of screen —

Type of pump Jet or Deep Well

Capacity of pump 4 GPM

Depth of pump setting 50'

Date of completion JAN 16 - 64

BAILING OR PUMPING TEST

Pumping Rate 20 G.P.M. Duration of test 1 3 hrs

Drawdown 5' ft. Date JAN - 16 - 64

Static level-depth to water 20 ft

Quality (clear, cloudy, taste, odor) CLEAR

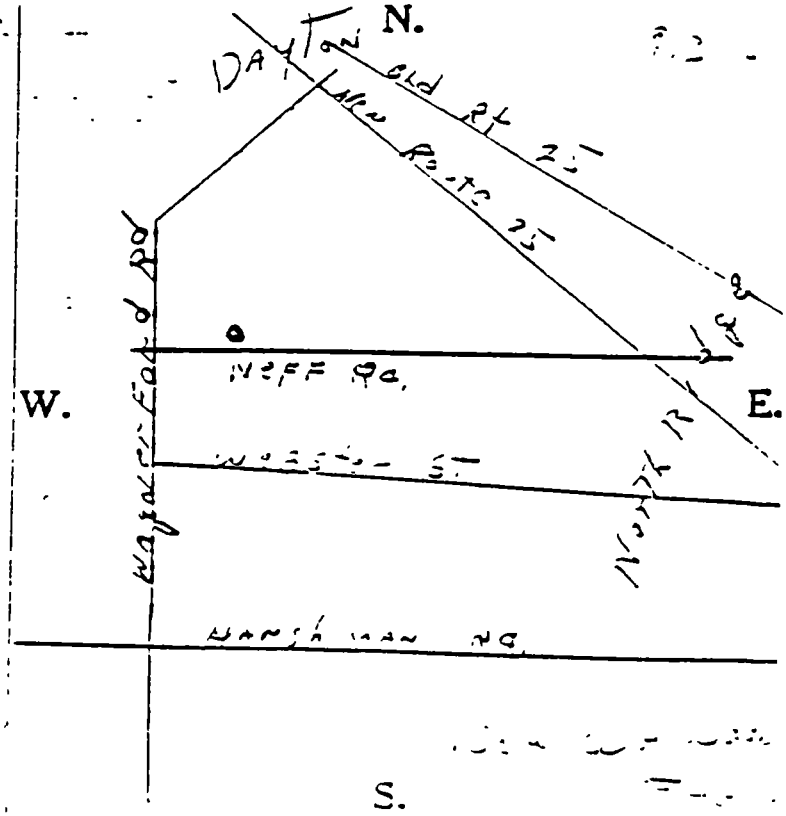
Pump installed by CHAS E. HAMILTON

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
CLAY	0 Feet	4 Ft.
GRAVEL	4	55
BLUE CLAY	55	60
SAND + GRAVEL	60	63
WATER AT 60 - 63 FT		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm Chas E Hamilton Date Jan - 16 - 64

Address 614 Wenatchee Ave Signed Chas E Hamilton

WELL LOG AND DRILLING REPORT

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

PLEASE USE PENCIL OR TYPEWRITER
DO NOT USE INK

No 36803

County Cuyahoga Township Strongsville Harrison Section of Township

Owner Earl Hill Address 3627 Neff Rd.

Location of property

CONSTRUCTION DETAILS

Casing diameter 5 5/8 Length of casing 66
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting
Date of completion

BAILING OR PUMPING TEST

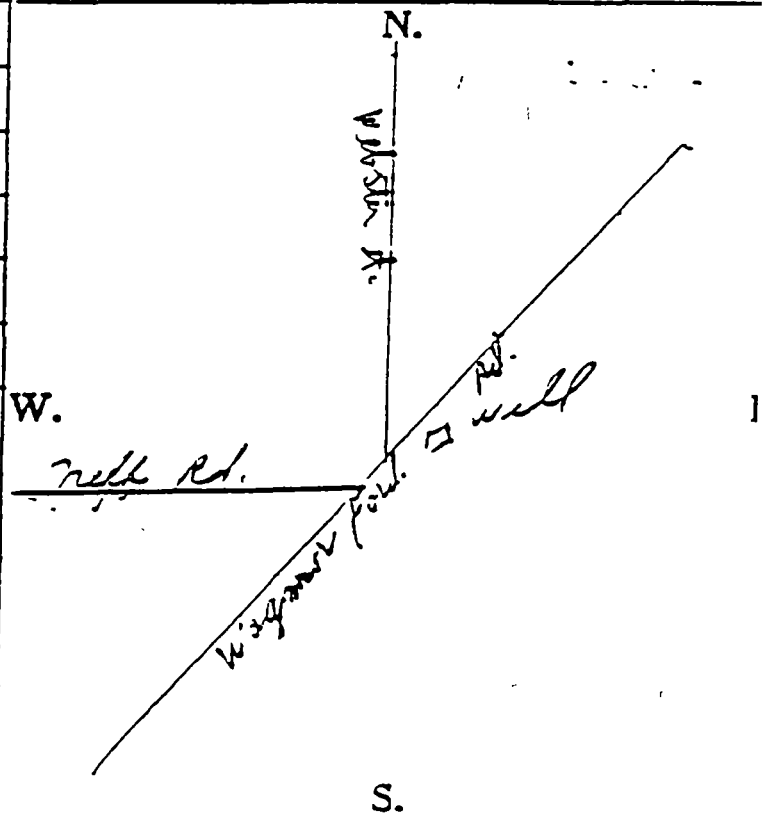
Pumping Rate 10 G.P.M. Duration of test
Drawdown 45 ft. Date Dec 17
Static level-depth to water 35
Quality (clear, cloudy, taste, odor)
Pump installed by

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Overburden	0 Feet	4 Ft.
Sand and Gravel Wtr	4	44
Hard Gravel	44	64
Clay	64	65
Gravel Wtr	65	66

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc



See reverse side for instructions

Drilling Firm Lukemire Well Drilling Date Dec 18 67
Address 765 Ryan Brunsdale Rd Signed
Twinsburg Ohio

WELL LOG AND DRILLING REPORT

NO. CARBON PAPER NECESSARY— SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
65 S. Front St., Rm. 815 Phone (614) 469-2646
Columbus, Ohio 43215

No. 420727

County Montgomery Township Miami Section of Township 12

Owner Village of Germantown Address Germantown, Ohio 4532

Location of property

CONSTRUCTION DETAILS

Casing diameter 10" Length of casing 42'
Type of screen R.B. Length of screen 7'
Type of pump None
Capacity of pump
Depth of pump setting
Date of completion

BAILING OR PUMPING TEST
(Specify one by circling)

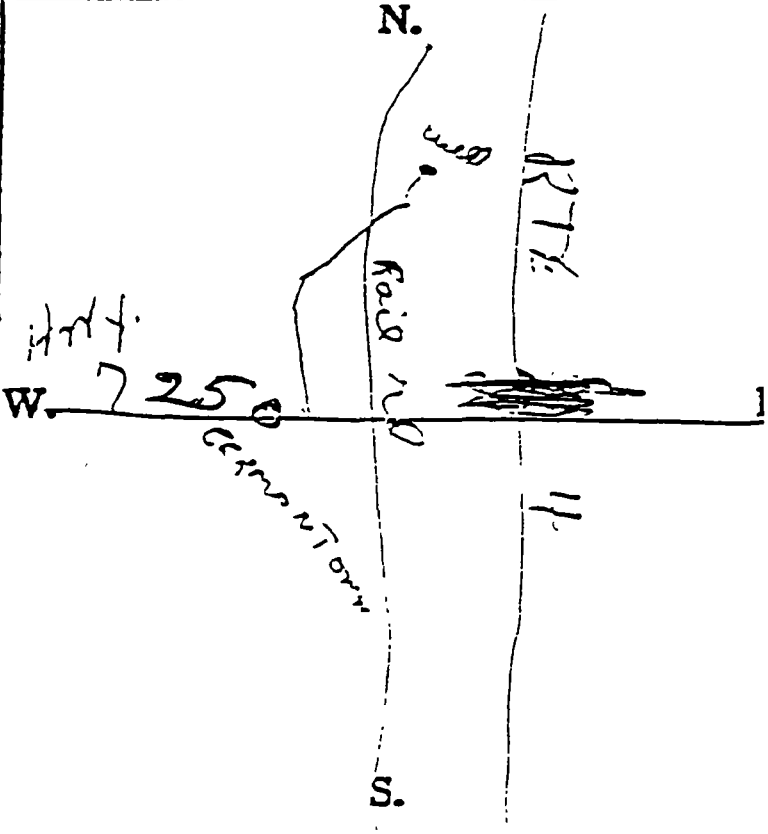
Test Rate 247 G.P.M. Duration of test 7½
Drawdown 24'3" ft. Date March 19 1972
Static level-depth to water 11'
Quality (clear, cloudy, taste, odor) Clear
Pump installed by

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top Soil	0 Feet	3 Ft.
Dry Gravel	3'	8'
Brown Hard Gravel (Dry)	8'	13'
Clay	13'	16'
Brown Gravel & Boulders	16'	25'
White Gravel	25'	29'
Brown Sand - Fine Gravel	29'	34'
Sandy Clay	34'	40'
Sand & Gravel	40'	43'

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc



Drilling Firm MOODY'S OF DAYTON, INC.
Address P O Box 133, 4359 Infirmary Road, Miamisburg, Ohio 45342, 513-859-[illegible]

Date Dec 8, 1975
Signed C O Burgess

X = 1,526,800 (500 x 500)
Y = 661,700-S

WELL LOG AND DRILLING REPORT

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No. 111070

County Monte Township Harrison Section of Township or Lot Number —

Owner Richard Brandon Address 2216 Cliff rd. Dayton

Location of property Intersection Super Highway and Cliff rd

CONSTRUCTION DETAILS

Casing diameter 5" Length of casing 53'
Type of screen — Length of screen —
Type of pump —
Capacity of pump —
Depth of pump setting —

PUMPING TEST

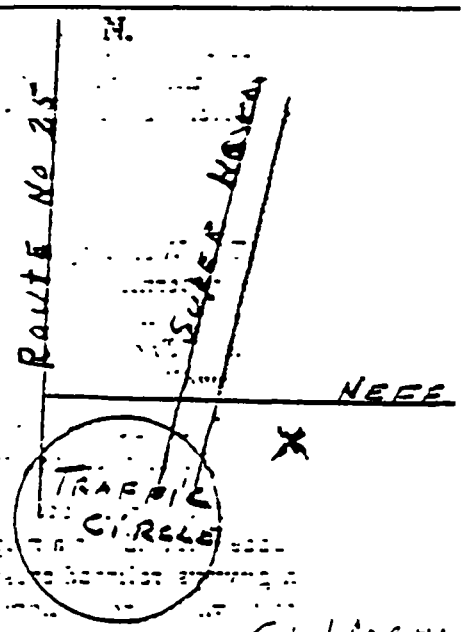
Pumping rate 12½ G.P.M. Duration of test 1
Drawdown 3 ft. Date 2-25-54
Developed capacity 250 gal. in 60
Static level—depth to water 28
Pump installed by —

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 Feet	6 Ft.
Clay	6	32
gravel	32	37
Clay	37	51
gravel	51	53
water	51 - 53	

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm W. F. Spencer Date Feb 25 1954
Address 3424 Germantown Ave. Signed W. F. Spencer

X-1,575,900
(500 x 500)
-659,900 S

WELL LOG AND DRILLING REPORT

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

ORIGI

No 136521

County Montgomery Township Harrison Section of Township or Lot Number 5 1

Owner Northridge School Board Address

Location of property Grafton Kennedy School Wagner Ford Rd

CONSTRUCTION DETAILS

Casing diameter 6" OD Length of casing 115'
Type of screen Cook #60 Length of screen 8'
Type of pump Myers Submersible
Capacity of pump 500 G.P.M.
Depth of pump setting 80'

PUMPING TEST

Pumping rate 40 G.P.M. Duration of test 8
Drawdown 0 ft. Date 9-1-54
Developed capacity 40 G.P.M.
Static level—depth to water 30'
Pump installed by W. S. Williams

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From. 0 Feet	To Ft.
sandy clay	0	21
rock and clay	21	70
sand	70	105
red gravel	105	115

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc

N.
W.
S.
Well
Wagner Ford Rd
Hauk 115

See reverse side for instructions

Drilling Firm W. S. Williams Date 9-11-54
Address R.F.D. 2 Miamisburg Signed W. S. Williams

WELL LOG AND DRILLING REPORT

ORIGIN

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus 12, Ohio

PLEASE USE PENCIL OR TYPEWRITER
DO NOT USE INK

No 278540 9c

County [illegible] Township [illegible] Section of Township 15

Owner [illegible] Address 3690 Wagner Ford Rd

Location of property [illegible]

CONSTRUCTION DETAILS

Casing diameter 5" Length of casing 60

Type of screen ____ Length of screen ____

Type of pump ____

Capacity of pump ____

Depth of pump setting ____

Date of completion ____

BAILING OR PUMPING TEST

Pumping Rate 10 G.P.M. Duration of test 1 hrs

Drawdown 2 ft. Date Sept 1 62

Static level-depth to water 96 ft

Quality (clear, cloudy, taste, odor) Clear.

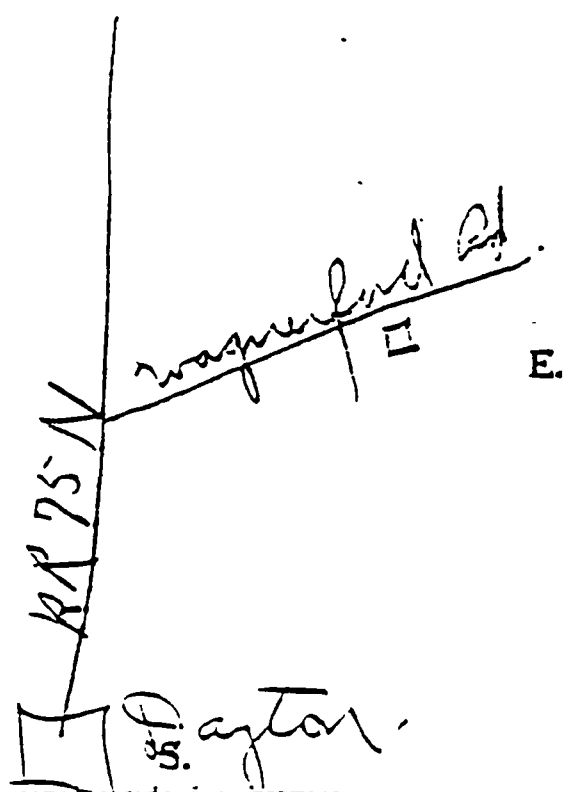
Pump installed by ____

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Clay	0 Feet	20 Ft.
sand & gravel	20	42
Clay	42	59
gravel.	59	60

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm CLAY P GARRISON
WELL CONTRACTOR

Address 330 S. DIXIE DR.
DAYTON 1, OHIO

Date Sept 3 1962

Signed Clay P Garrison

y = 1,537,200 (1000 x 1000)
x = 1,065,600 - S

WELL LOG AND DRILLING REPORT

ORIGI

H V

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 129088

County Montgomery Township Harrison Section of Township or Lot Number Northridge

Owner Robert W. Burke Address 3300 Susannah Avenue Dayton 4, Ohio

Location of property Susannah Avenue Northridge, Dayton 4, Ohio

CONSTRUCTION DETAILS

Casing diameter 4 in. Length of casing 37'

Type of screen Length of screen

Type of pump

Capacity of pump

Depth of pump setting

PUMPING TEST

Pumping rate G.P.M. Duration of test

Drawdown ft. Date

Developed capacity

Static level—depth to water

Pump installed by

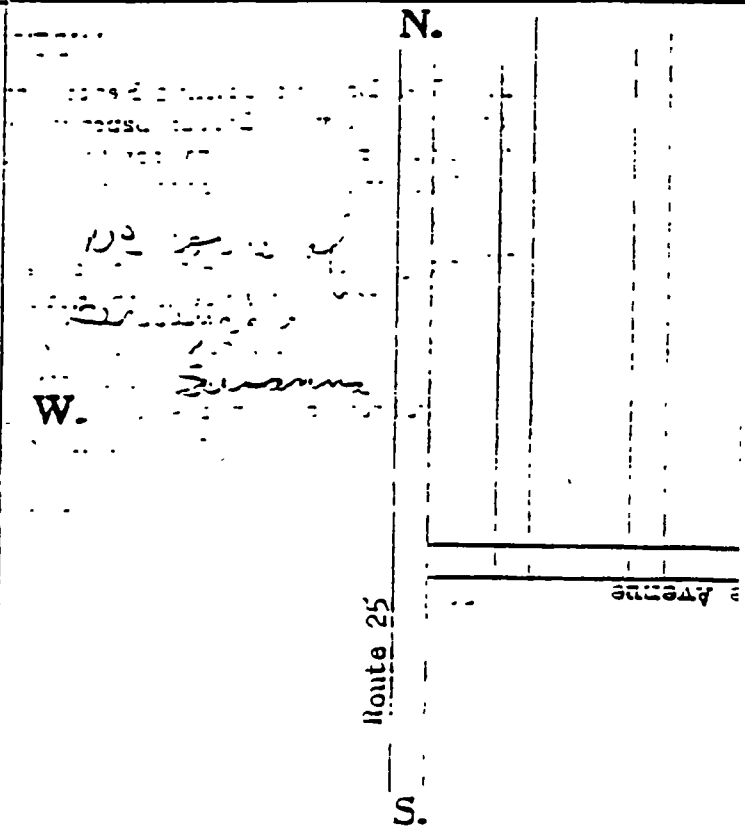
WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top soil	0 Feet	2 Ft.
Sand and Gravel	2	12
Boulders	12	14
Sand	14	33
Clay and Gravel	33	35
Sand and Gravel, Water.	35	37

Dip test at approx.
10 G.P.M.

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, et



See reverse side for instructions

Drilling Firm EARL HOLLANDSWORTH, Inc. Date June 10 1954

Address 2539 Poe Avenue Dayton, Ohio Signed

V-1,525,000
(2000 y 2020)
257,803-S

WELL LOG AND DRILLING REPORT

ORIGIN

Division of Water of the State of Ohio
OHIO WATER RESOURCES BOARD
Department of Public Works
553 E. Broad St., Columbus 15, Ohio

No. 62840

(15)

County Montgomery Township Harrison Section of Township or Lot Number Emery Park Plat

Owner Clark Melton Address ~~2509~~ 2509 Neva Avenue Dayton 4, Ohio

Location of property 2509 Neva Avenue 4 blocks East of State Route 25 3 blocks North of the Great Miami River.

CONSTRUCTION DETAILS

Casing diameter 4" Length of casing 36'

Type of screen Length of screen

Type of pump

Capacity of pump

Depth of pump setting

PUMPING TEST

Pumping rate G.P.M. Duration of test

Drawdown ft. Date

Developed capacity

Static level of completed well 0' ft.

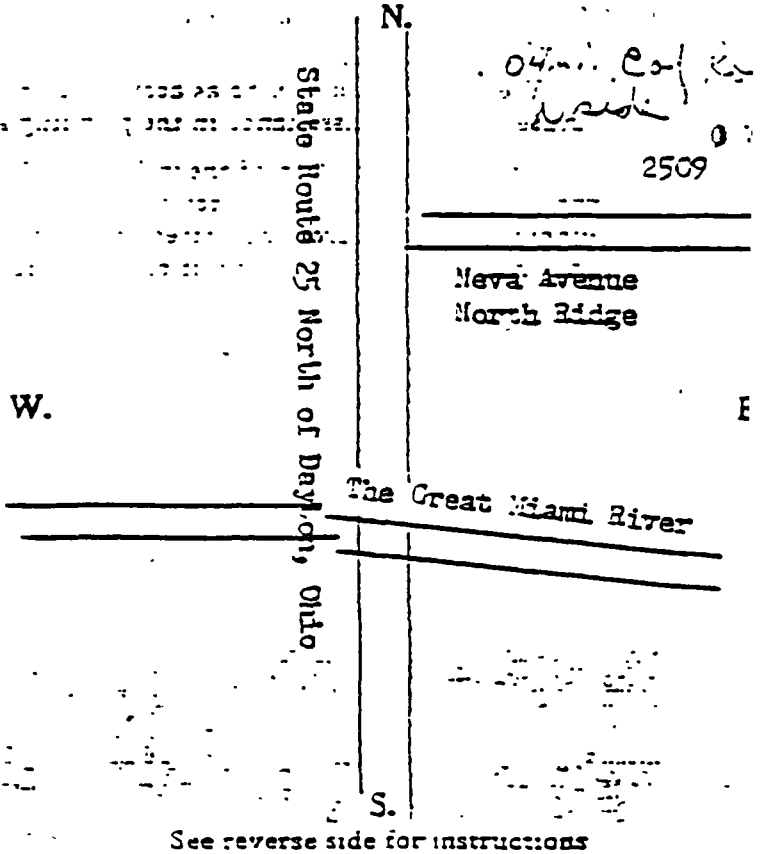
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top Soil	0 Feet	4 Ft.
Clay	4	14
Clay & Gravel	14	20
Sand, some Gravel	20	36
Dip test at approx. 12 G.P.M.		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm EARL HOLLANDSWORTH Well Drilling Date January 16 1953

Address 1538 Ome Avenue - North Ridge DAYTON, OHIO

Signed Earl Hollandsworth II

1,524,500
(2000 x 3000)

WELL LOG AND DRILLING REPORT

OHIO WATER RESOURCES BOARD

Department of Public Works

553 E. Broad St., Columbus 15, Ohio

No. 47125

County MONTgomery Township Harrison Section of Township or Lot Number North Ridge

Owner F. W. Edmond Address 2474 Oneida a

Location of property 2474 Oneidas ave North Ridge

CONSTRUCTION DETAILS

Casing diameter 5 3/16 Length of casing 38'

Type of screen ______ Length of screen –

Type of pump None

Capacity of pump ______

Depth of pump setting ______

PUMPING TEST

Pumping rate ______ G.P.M. Duration of test ______

Drawdown ______ ft. Date ______

Developed capacity ______

Static level of completed well ______ ft.

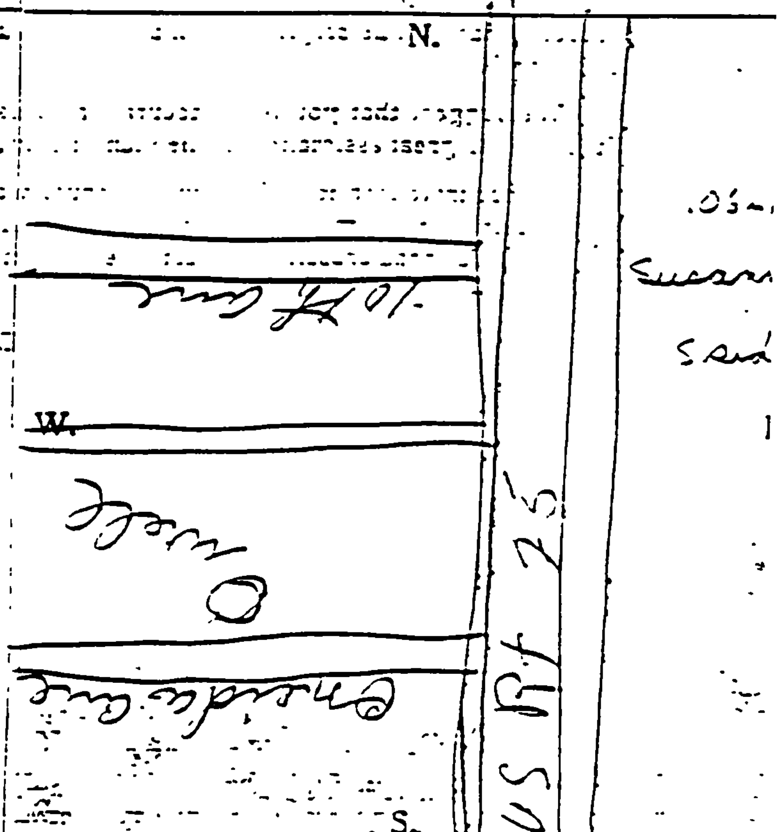
Pump installed by ______

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Soft gravel	0 Feet	20 Ft.
Water gravel	20	25
Blue clay + gravel	25	32
Sand & gravel	32	38
22 ft water		
Pump test at		
4 pm at 20 G.P.M.		
no draw down		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm EARL HOLLANDSWORTH Well Drilling

Address 2528 One Avenue - North Ridge DAYTON OHIO

Date 8-21-45

Signed Earl Hollandsworth

WELL LOG AND DRILLING REPORT

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No. 146319

County Montgomery Township Harrison Section of Township or Lot Number Northridge

Owner Lester E. Brinkers Address 2576 Oneida Avenue Dayton 4, Ohio

Location of property 2576 Oneida Avenue (Northridge) Dayton 4, Ohio

CONSTRUCTION DETAILS

Casing diameter 4" Length of casing 42'
Type of screen Length of screen
Type of pump Hand pump
Capacity of pump
Depth of pump setting

PUMPING TEST

Pumping rate G.P.M. Duration of test
Drawdown ft. Date
Developed capacity
Static level—depth to water 9'
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top soil	0 Feet	3 Ft.
Clay	3	9
Clay and Gravel	9	15
Sand and Gravel, Silt	15	35
Sand and Gravel	35	42
Dip test at approx. 10 G.P.M.		

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, et

N.

.07mi. [illegible]

W.

S.

See reverse side for instructions

Drilling Firm [illegible] HOLLANDSWORTH, INC.
Address 587 Ewell Road
Dayton 4, Ohio

Date August 24, 1955

Signed [illegible]

WELL LOG AND DRILLING REPORT

State of Ohio
OHIO WATER RESOURCES BOARD
Department of Public Works
553 E. Broad St., Columbus 15, Ohio

County Montgomery Township Harrison Section of Township or Lot Number Carry Park Plat 15

Owner F. Tunnell Address 1514 Cme Avenue, Dayton 4, Ohio

Location of property 4 Blocks East of U.S.State Route 25. North edge of Dayton,O. Along the Miami River.

CONSTRUCTION DETAILS

Casing diameter 4" Length of casing 38'
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

PUMPING TEST

Pumping rate G.P.M. Duration of test h
Drawdown ft. Date
Developed capacity
Static level of completed well 15 ft.
Pump installed by

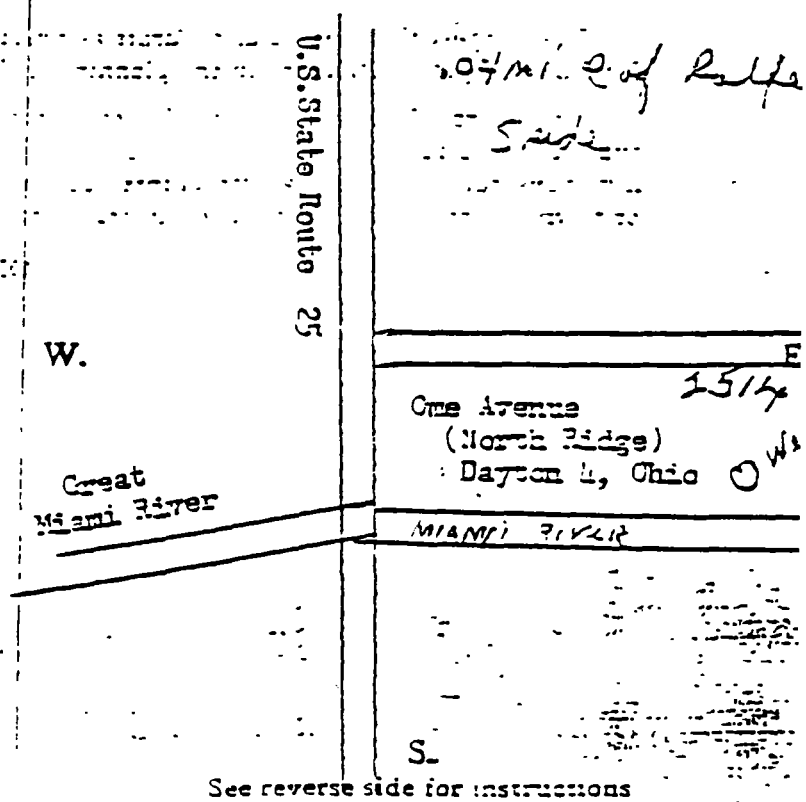
WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top Soil	0 Feet	2 Ft.
Gravel & Sand	2	38

D&P Test approx. 10 G.P.M.

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm EARL HOLLANDSWORTH Well Drilling
Address 1535 Cme Avenue - North Ridge DAYTON, OHIO
Date June 15 1953
Signed Earl Hollandsworth